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Pathology

HISTOMOPHOLOGIC SPECTRUM OF ENDOMETRIAL BIOPSIES IN WOMEN PRESENTING WITH AUB AT A RURAL TEACHING HOSPITAL IN SOUTH INDIA.

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ABSTRACT **Introduction:** AUB is described as variations in the volume of blood loss or intermenstrual bleeding, duration of the flow, and frequency of menstruation. The gold standard for identifying the various causes of AUB is still endometrial biopsy followed by histopathological analysis. **Objectives:** The present study was done to determine histopathological spectrum of endometrial pathologies and their clinical correlation in women presenting with AUB. **Methods:** A prospective study was conducted on 123cases of endometrial biopsies reported in the SCMCH and RI, Channapatna, Department of Pathology. **Results:** Of the 123 endometrial samples that were examined, 69 cases (56% of all cases) exhibited normal cyclical patterns, including proliferative and secretory phases. Disordered proliferative endometrium was the next most prevalent, accounting for 12% (15 cases), and it was primarily observed in the perimenopausal age group (40–50 years). In addition, endometrial polyp and endometrial hyperplasia without atypia were commonly observed in the perimenopausal age range, representing 5.2% and 6.7% of all cases, respectively. The most frequent conditions in the post-menopausal age group (>50 years) were atrophic endometrium (10.8% of all cases) and endometrial cancer (1.8%). The reproductive age group (18-39 years) had 6.5% cases of the pill endometrium .Two cases (1.2%) were identified as chronic endometritis. **Conclusions:** The functional patterns (proliferative and secretory patterns) were identified as the main etiologies with a low incidence of endometrial cancer in our study, despite the fact that there are many other causes of AUB.

KEYWORDS : AUB, endometrium, proliferative, secretory.

INTRODUCTION:

A normal menstrual cycle is characterized by "secretory endometrial bleeding associated with an ovulatory cycle, not exceeding five-day duration."[1] Any pattern of bleeding that is different from that seen during a regular menstrual cycle or after menopause in terms of frequency, length, and amount is known as abnormal uterine bleeding(AUB).More than half of women and girls who are of reproductive age experience abnormal uterine bleeding (AUB), which frequently impact them . One in five women will experience menstruation problems at some point in their lives, and abnormal uterine bleeding (AUB) is one of the most prevalent and incapacitating menstrual issues. It has been observed that one-third of women presenting to the gynecology outpatient department do so with complaints of AUB. It can present in a variety of ways, such as post-coital bleeding, irregular or frequent cycles, heavy menstrual bleeding (HMB), or post-menopausal bleeding (PMB).[2] Menstruation problems account for a significant portion of morbidity. While irregularities in the length, frequency, and duration of periods are among the signs of AUB, heavy menstrual bleeding (HMB) is the primary cause of iron deficiency and associated nutritional deficiency anemias [3]

AUB is described as variations in the volume of blood loss or intermenstrual bleeding, the duration of the flow, and the frequency of menstruation [4]. FIGO developed two ways to evaluate and categorize AUB. Four key descriptors—frequency, duration, regularity, and flow volume—are used by FIGO System 1 to define the bleeding pattern. The PALM-COEIN term is used in FIGO System 2, which offers an organized categorization scheme for potential AUB causes. "COEIN" stands for nonstructural causes of AUB (coagulopathy, ovarian dysfunction, endometrial, iatrogenic and not otherwise specified), whereas "PALM" stands for structural causes (polyp, adenomyosis, leiomyoma, malignancy) [3].

The gold standard for identifying the various causes of AUB is still endometrial biopsy followed by histopathological analysis. Because it largely depends on time as to when the endometrial biopsy was done in relation to the cycle and bleeding, the incidence of abnormal endometrium findings may not always indicate the true incidence of abnormal endometrial bleeding [5].

Endometrial biopsy is used as a first-line test for females over 45 years who presented with AUB. Patients under 45yearsold who have history of unopposed estrogen exposure, failed therapeutic management, or persistent AUB are also candidates for endometrial biopsies.[6]Long standing history of AUB can lead to significant morbidity due to anaemia related to blood loss, pain and discomfort. Hence timely diagnosis and appropriate management based on histopathological findings is essential. The results of this study can be utilized in developing high quality laboratory services to meet the needs of rural women attending our Obstetrics and Gynecology outpatient clinic.

The present study was done to determine histopathological spectrum of endometrial pathologies and their clinical correlation in women presenting with abnormal uterine bleeding in a rural teaching hospital in south India.

MATERIALS & METHODS:

A prospective study was conducted on 123cases of endometrial biopsies reported in the SCMCH and RI , Channapatna ,Pathology Department between 1/1/2023 and 29/2/2024 were included. Corresponding Histopathology reports, Haematoxylin and Eosin (H&E) slides and requisition forms were obtained from the Dept. of Pathology archives. Clinical information was extracted from the pathology requisition. Completeness and adequacy on the requisition slips were also examined.

Inclusion Criteria: All endometrial biopsies reported in the SCMCH and RI Pathology Department between 1/1/2023 and 29/2/2024 were included.

Exclusion Criteria:

1. Endometrial curettage done for products of conception; missing data, referral cases
2. Individuals with vaginal, cervical, pathology.
3. Individuals suffering from systemic illnesses such as hemostatic disorders and hypothyroidism
4. Unsatisfactory samples: no endometrial glands or stroma; only blood clots and fibrin

Data Collection And Analysis: Abstracted data were entered in a master excel data sheet and analyzed using statistical software. The

histopathology report, corresponding H&E slides and pathology requisition slips were identified using the Histopathology (HPE) case ID and/or Outpatient Number. Histopathology (HPE) case ID and/or Outpatient Number were not saved and a study ID was assigned in their place in the dataset. The data collected included, patient age, chief complaints, and secondary complaints, menopausal status, LMP, relevant physical examination findings, USG findings, medication history, reported pathology diagnosis. Descriptive and inferential statistical analysis was performed. Data was saved on department computer system with limited personnel access. Only in-house cases were included in the study.

RESULTS AND OBSERVATIONS:

Of all the 123 endometrial samples that were examined, 69 cases (56% of all cases) exhibited normal cyclical patterns, including proliferative and secretory phases. Disordered proliferative endometrium was the next most prevalent, accounting for 12% (15 cases), and it was primarily observed in the perimenopausal age group (40–50 years). In addition, endometrial polyp and endometrial hyperplasia without atypia were commonly observed in the perimenopausal age range, representing 5.2% and 6.7% of all cases, respectively.

The most frequent conditions in the post-menopausal age group (>50 years) were atrophic endometrium (10.8%) of all cases and endometrial cancer (1.8%).

The reproductive age group (18-39 years) was more likely to have 6.5% cases of the pill endometrium.

Two cases (1.8%) were identified as chronic endometritis. Majority of the patients belonged to the reproductive age group (18–39 years old), followed by the perimenopausal age group (40–50 years old).

Sl. No	Histopathological diagnosis	No. of patients	Percentage
1	Proliferative phase	37	29.8%
2	Secretory phase	32	25.9%
3	Disordered proliferative endometrium	15	12.1%
4	Atrophic endometrium	13	10.8%
5	Pill endometrium	08	6.5%
6	Endometrial polyp	06	5.2%
7	Hyperplasia without atypia	08	6.7%
8	Chronic endometritis	02	1.8%
9	Endometrial carcinoma	02	1.8%
	Total	123	100%

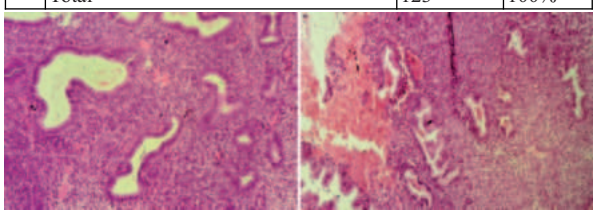

Fig 1: Disordered proliferative endometrium
Fig 2: Secretory phase with decidualised stroma

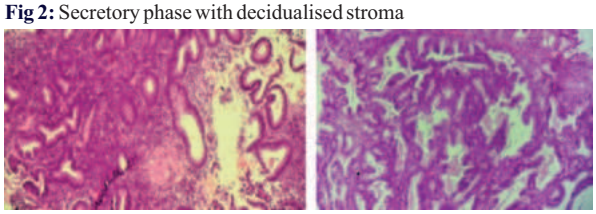

Figure 3: Endometrial hyperplasia without atypia
Figure 4: Endometrial adenocarcinoma

DISCUSSION:

AUB is a common symptom that can have a variety of physiological, pathological, or pharmacological origins. It causes physical and social morbidity and necessitates proper evaluation and treatment [7]. The purpose of endometrial curettage and biopsy is to assess the causes of AUB, infertility, or follow-up after treatment. A thorough clinical history that includes the menstrual status and any history of exogenous hormones or medications is necessary for the interpretation of endometrial biopsy specimens [8, 9]. Research indicates that approximately 6% of women between the ages of 25 and 44 see a doctor each year as a result of experiencing severe menstrual loss.

The female subjects in our study were between the ages of 18 and 70 years. Reproductive (18–39 years old) age groups had the highest frequency of AUB , followed by perimeopausal (40–50 years old) age groups and postmenopausal (over 50 years old) age groups . In the majority of research, such as those by Khan R et al. [7], Tiwari A et al. [10], and Sajitha K et al. [11], this age group is also the most frequently impacted. We observed that the histological development was significantly influenced by age. Age was closely correlated with the severity of the lesions; those in the perimenopausal and postmenopausal age groups had more advanced lesions than those in the reproductive age group.

Endometrial samples can be histopathologically examined to differentiate between non-structural/functional and structural/organic etiologies [12]. Functional etiologies are found to be more prevalent than organic etiologies in our study. Normal physiological alterations, such as proliferative and secretory patterns, were most frequently observed in the current investigation. A secretory phase endometrium was observed in 32 cases (25.9%) and a proliferative pattern in 37 cases (29.8%). Other studies also reported similar incidence [7,10,11]. Anovulatory cycles may be the cause of the bleeding during the proliferative phase, while ovulatory dysfunctional uterine bleeding may be the cause during the secretory phase [13,14]. Additionally, according to Baral-R et al. [15], irregular endometrial shedding appears to be induced by gradual corpus luteum degeneration with extended exposure to progesterone, which is why it shows up as cyclic protracted menstruation.

With 15 cases (12.1%), disordered proliferative endometrium [Figure1] was the most common hormonal imbalance pattern observed. It was the third most common pattern overall and was most prevalent in the perimenopausal age range (40–50 years). Similar rates were observed in the studies of Roopmala M et al. [16], Kumari SR [17], Pratibha Singh [18] where disorganized proliferative endometrium ranked third overall in 11.49%, 15.6%, and 22.12% of cases, respectively. Proliferative endometrium and disordered proliferative endometrium share characteristics, although desynchronized glandular growth distinguishes the former from the latter. The spectrum of endometrial proliferative lesions comprises cancer at one end and disordered proliferative pattern at the other, with hyperplasia phases in between [8, 9]. Anovulatory cycles throughout the perimenopausal years are prevalent cause of disordered proliferative endometrium.

At 10.8% (13 cases), the incidence of atrophic endometrium is nearly identical to earlier research studies [7, 10, 18]. Due to a lack of ovarian estrogen, atrophic endometrium is frequently observed in post-menopausal women but is uncommon in women of reproductive age and occasionally in perimenopausal women. Even in the absence of a visible lesion, postmenopausal bleeding may be caused by the thin, atrophic endometrium, which is prone to slight damage. Under a thin endometrium are dilated superficial big venules that have the potential to burst and result in severe uterine bleeding.

The other etiology of AUB was the pill endometrium, which accounted for 6.5% (08 cases) of all patients (Figure 2). It was distinguished by the presence of dormant glands, some of which had abortive discharges, decidual response, and thin-walled blood vessels [8, 11]. The most frequent pathogenic etiology in the current study is endometrial polyps (5.2%). The incidence was similar to the study conducted by Sajitha K. et al. (5.12%).

Endometrial hyperplasia (Figure 3) manifests as AUB and is the precursor of cancer. Being able to identify endometrial hyperplasia plays a crucial role as it can progress into endometrial carcinoma. When women in their perimenopause experience irregular or prolonged bleeding, endometrial hyperplasia is frequently diagnosed. The cause of this is elevated estrogen levels. The stroma and glands are both impacted by the expansion, but there is also aberrant vascularization [9]. The perimenopausal age group was the main demographic where we found endometrial hyperplasia without atypia in 08 patients (6.7%).S Kavita et al also had similar findings in her study. [19]

In our study, 2 patients (1.8%) had malignancy (Figure 4). According to studies conducted by Kumari SR et al. [17], Roopmala M et al. [16], and Singh P et al. [18], the incidence of malignancy was 2.6%, 1.8%, 2.87%, and 2%, respectively. The bulk of cancer cases were found in

postmenopausal age groups in the majority of the studies. Our population's early marriage rates among women may contribute to the reduced prevalence of endometrial cancer by encouraging early pregnancy and multi-parity.

CONCLUSION:

According to our study, AUB is one of the most common gynecological complaints in and around small villages in Channapatna. The functional patterns (proliferative and secretory patterns) were identified as the main etiology of AUB along with a low incidence of endometrial cancer in the current study. This could be attributed to a small sample size. Histopathological examination is considered as the gold standard for analyzing endometrial biopsies which can help to reduce morbidity by offering appropriate management.

Conflict Of Interest: None

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