



DEPARTMENT OF PATHOLOGY
SHER-I-KASHMIR INSTITUTE
OF MEDICAL SCIENCES

**SOURASRINAGAR,
JAMMU AND KASHMIR**

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PG Scholar

(2022 – 2025)



DEPARTMENT OF PATHOLOGY
SHER-I-KASHMIR INSTITUTE OF MEDICAL SCIENCES

SOURA, SRINAGAR, JAMMU AND KASHMIR

TITLE OF THE STUDY

**HISTOPATHOLOGICAL
EVALUATION OF ENDOMETRIAL
BIOPSIES AND CURETTAGE IN
ABNORMAL UTERINE BLEEDING**

NAME OF THE POSTGRADUATE

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SESSION: 2022 – 2025



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CERTIFICATE

This is to certify that **Dr. Saima Bashir** has been registered as a postgraduate student in the Department of Pathology in March 2022. She is undertaking the study entitled **“Histopathological Evaluation of Endometrial Biopsies and Curettage in Abnormal Uterine Bleeding”** under our guidance and supervision for her thesis in partial fulfillment of the degree of MD in Pathology.

This work has not been administered previously for award of any degree, diploma or any other similar distinction.

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INTRODUCTION

Abnormal uterine bleeding (AUB) is defined as bleeding from uterine corpus that is abnormal in regularity, volume, and frequency or duration that occurs in absence of pregnancy¹. AUB is a bleeding pattern differing from normal menstrual pattern or after menopause in frequency, duration, and amount of blood flow². It is an umbrella term which includes heavy menstrual bleeding, intermenstrual bleeding and ovulatory disorders which has replaced previously used inconsistent and confusing terminologies like menorrhagia, metrorrhagia and dysfunctional uterine bleeding. AUB is a significant debilitating condition and affects 14-25% of women of reproductive age group and upto 50% of perimenopausal women.^{3,4,5} The diagnosis and management of abnormal uterine bleeding (AUB) is one of the most common reasons women seek gynecologic care.

Women with this complaint may have one or more conditions contributing to their symptoms. The worldwide impact of abnormal uterine bleeding (AUB) in the reproductive years is substantial, with a prevalence of approximately 3%–30% among reproductive aged women. The reasons for the wide spectrum of estimates are unclear but vary with age, being higher in adolescents and in the fifth decade of life (perimenopausal period) and varying somewhat with the country of origin. Approximately one third of

women are affected at some time in their life. Many of the published studies are restricted to estimates of the prevalence of the symptoms of heavy menstrual bleeding (HMB); when other symptoms particularly those of irregular and inter menstrual bleeding are included the prevalence rises to 35% or higher. Reproductive age starts at 15 years of age and ends 49 years whereas Perimenopause is described as transitional years prior to menopause that encompasses the change from normal ovulatory cycle to cessation of menses,⁶ which according to WHO is defined as the period (2-8 years) preceding menopause and the one-year period free after final menses, resulting from the loss of ovarian follicular activity⁷. The perimenopause usually begins at a mean age of 45.5-47.5 years and has an average duration of 4 years until menopause occurs (mean age of 51.3 years).

Earlier there was a lot of discrepancy in the nomenclature used to describe abnormal uterine bleeding (AUB) and medical terminology used to describe abnormal uterine bleeding has had many descriptions and labels with poor correlation between the terminology and medical diagnosis, making research and clinical management of this spectrum of disorders difficult. The development of consistent and universally accepted

nomenclature was a step toward rectifying this unsatisfactory circumstance. Another requirement was the development of a classification system on several levels which can be used by clinicians, investigators, and even patients to facilitate clinical care, research and communication⁸.

Thus, the International Federation of Gynecology and Obstetrics (FIGO) published the consensus on the terms and definitions of normal and abnormal uterine bleeding in 2007 and in 2011, a new nomenclature of AUB was introduced, and the terms uterine bleeding and excessive menstruation were cast aside.⁹The acronym PALM-COEIN is now being widely used for categorizing the causes of AUB: polyp (AUB-P), adenomyosis (AUB-A), leiomyoma (AUB-L), malignancy and hyperplasia (AUB-M), coagulopathy (AUB-C), ovulatory dysfunction (AUB-O), endometrial (AUB-E), and iatrogenic and not otherwise classified (AUB-N).¹⁰ The PALM COEIN classification was adopted by FIGO (International federation of Gynecology and Obstetrics)executive board as a FIGO classification system in order to standardize the factors associated with AUB. This classification is now a universally accepted system of nomenclature and classification.

ENDOMETRIAL

Abnormal uterine bleeding could also be due to primary disorders of endometrium. High-quality evidence has demonstrated deficiencies in local

production of vasoconstrictors such as endothelin-1 and prostaglandin F2 α , and/or accelerated lysis of endometrial clot because of excessive production of plasminogen activator¹¹. There is also evidence showing an increased local production of substances that promote vasodilation, e.g. prostaglandin E2 and prostacyclin^{12,13}. Considering these facts, the PALM-COEIN classification has included primary disorders of local endometrial “haemostasis” in the category named Endometrial (AUB-E).¹⁴ Endometrial inflammation or infection may also play a role in the genesis of AUB.¹⁵ Lesions like chronic endometritis are not rare in the histopathological diagnosis of endometrial sampling. However, chronic endometritis is not sub-classified, citing lack of evidence to demonstrate a consistent relationship with the occurrence AUB¹⁶. Other rare associations like arterio-venous malformations and pelvic tuberculosis are also not included in this category due to lack of evidence.¹⁴ Therefore, AUB-E is concerned only with primary disorders of endometrial haemostasis which invariably becomes a diagnosis by exclusion of other identifiable abnormalities.¹⁴

The endometrium is a dynamic tissue that undergoes physiologic and characteristic morphologic changes during the menstrual cycle as a result of sex steroid hormones coordinately produced in the ovary. The ovary, in

turn, is influenced by the hormones produced by pituitary. Together, the hypothalamic, pituitary and ovarian factors and their interactions regulate maturation of ovarian follicles, ovulation and menstruation¹⁷.

Endometrial biopsy is a procedure in which a tissue sample is taken from the inner lining of the uterus (endometrium), and is examined under the microscope for knowing the hormonal status or any pathology¹⁸.

Endometrial sampling and subsequent histopathological study remain the gold standard for diagnosis of causes of AUB¹⁹. For endometrial sampling, endometrium curetting is a safe and an easy technique and its histopathological analysis is considered the gold standard for diagnosis of the etiology of AUB along with reasonable reporting time and diagnostic accuracy²⁰. Endometrial curettings exhibit a wide range of histopathological patterns due to normal and abnormal cyclical changes, drugs, hormones, infections, metabolic disease and malignancies²¹. So, management of AUB is not complete without tissue diagnosis especially in perimenopause and post menopause²².

The endometrial biopsy is also an important part of the evaluation of the woman with infertility^{23,24}. Biopsies for the evaluation of infertility often are performed in the office using a small curette or a Pipelle aspirator and therefore the specimens tend to be small²⁵. The biopsy findings help

confirm that ovulation occurred, and indicate whether there was sufficient secretory effect, mediated by progesterone, during the luteal phase. To utilize fully the morphologic interpretation, the gynecologist compares the histologic date to the clinical data, including the date of the rise in the basal body temperature, the time of the serum luteinizing hormone (LH) surge, transvaginal ultrasound evaluation of follicular or corpus luteum development, serum progesterone level, or subtraction of 14 days from the onset of menses^{23,26-28}.

Histological evaluation begins with the identification of the surface epithelium, a prerequisite for orienting the underlying glands and stroma. The surface epithelium is less responsive to sex steroid hormones than the underlying glands, but it often shows alteration in pathologic conditions, especially when the abnormalities are subtle or focal. For example, during the proliferative phase, estrogenic stimulation induces development of ciliated cells along the surface²⁹. In contrast, ciliated surface epithelial cells are far more frequent in pathologic conditions, particularly those associated with unopposed estrogen stimulation, such as hyperplasia and metaplasia.³⁰⁻³⁴

AIMS AND OBJECTIVES

- To identify the various histopathological patterns in the endometrial biopsies and curetting in the patients of AUB.
- To see the correlation of the endometrial Biopsies and curetting in AUB with the radiological findings (if any) in these patients.

MATERIAL AND METHODS

The present observational study (retrospective, prospective) study will be conducted in Department of Pathology, SKIMS Medical College, Bemina Srinagar, after obtaining clearance from the Institutional Ethical Committee. Retrospectively (February 2022 February 2023) data will be obtained from the MRD section or archives of the Department of Pathology while as prospective study will be done with effect from (March 2023 – March 2025).

Study will be done on dilatation and curettage material obtained from women with a complaint of AUB attending the Department of Obstetrics and Gynaecology, SKIMS Srinagar.

Inclusion criteria

- Endometrial biopsies and curettings from the patients presenting with AUB irrespective of age group (excluding unmarried girls)

Exclusion criteria

- Patient presented with unsatisfactory samples like only blood clots and fibrin and no endometrial glands/stroma.
- AUB due to gestational causes like tubal pregnancy, molar pregnancy and abortion.
- Patients on hormone therapy within the last 6 month.
- Cervical pathology e.g. cervical cancer.

METHODOLOGY

Endometrial curettings are obtained by dilatation and curettage under sedation. All specimens will be sent for histology fixed in 10% neutral buffered formalin and submitted to routine tissue processing and paraffin embedding.

Adequacy Criteria:

Endometrial specimens are now taken at outpatients by pipelle or other techniques, with the result that many biopsy specimens contain scant, or even no, endometrial tissue. Paradoxically, superficial endometrial biopsy specimens with scant tissue often take longer to assess than intact biopsy specimens with an appreciable amount of tissue. It has been shown that in a postmenopausal woman with an atrophic endometrium and no focal lesion on ultrasound scan, the presence of scant endometrial tissue in biopsies from outpatients is the norm and there is little chance of missing relevant pathology. Furthermore, the classification of a biopsy specimen as inadequate may have medicolegal and clinical implications. For example, some clinicians routinely conduct a repeat biopsy when an endometrial specimen has been classified as inadequate. It is my policy in reporting endometrial specimens that a biopsy specimen (from either outpatient clinic or curettage) is classified as inadequate only if no endometrial tissue

is present. If there is any endometrial tissue, no matter how little, I do not categorise the specimen as inadequate. Instead, I use the term “unassessable” for those biopsies where minimal endometrial tissue is present and state that, although there is no hyperplasia, malignancy or any other specific diagnostic lesion, the tissue cannot be assessed. The presence of even a minimal amount of endometrial tissue provides presumptive evidence that the endometrial cavity has been entered, although theoretically endometrial-type glands with or without stroma can be derived from tuboendometrial metaplasia or endometriosis within the cervix. If intact tissue, comprising glands and stroma, is present then this can be typed, although with a comment that only a limited amount of tissue is available for examination

Sections of 5 μ thickness will be made slides will be stained by hematoxylin-eosin (H&E) and examined under light microscope. Recent World Health Organization (WHO) classification of tumors of female reproductive organs will be used for reporting of endometrial curettage.

Relevant clinical data including age, complain of patients, obstetric history, menstrual history, drug history and clinical diagnosis will be taken from histopathological requisition form. Histopathological diagnosis related record will be obtained from histopathological reports.

STATISTICAL METHODS

Data obtained will be saved in Microsoft Excel Spreadsheet and will be analysed using Statistical Package for Social Sciences (SPSS Ver. 23). Appropriate statistical tests will be applied to obtain the statistical analysis of the data. A p value of <0.5 will be considered as statistically significant.

REVIEW OF LITERATURE

Liu Z et al., (2007)³⁵ conducted a systematic review of the medical literature to evaluate the impact of abnormal uterine bleeding (AUB) on health related quality of life (HRQoL) and to quantify the economic burden of AUB from a societal perspective. The search yielded 1009 English-language articles. Ninety-eight studies (including randomized controlled trials, observational studies, and reviews) that met the inclusion and exclusion criteria underwent a full-text review. The prevalence of AUB among women of reproductive age ranged from 10% to 30%. The HRQoL scores from the 36-item Short-Form Health Survey Questionnaire (SF-36) suggested that women with AUB have HRQoL below the 25th percentile of that for the general female population within a similar age range. The conservatively estimated annual direct and indirect economic costs of AUB were approximately \$1 billion and \$12 billion, respectively. These figures do not account for intangible costs and productivity loss due to presenteeism. The burden of AUB needs further and more thorough investigation. Additional research should prospectively evaluate the impact of AUB and the value of treatment provided to help guide future health resource allocation and clinical decision-making.

Bhosle A and Fonseca M (2010)³⁶ did a study to evaluate clinically the gynaecological causes of abnormal uterine bleeding in perimenopausal women and to correlate clinical evaluation with ultrasonographic and histopathological examination. Retrospective study of 112 perimenopausal women with abnormal uterine bleeding for a period of 6 months. These women were evaluated and clinical, ultrasonographic and histopathological findings were correlated. The major symptom with which the women presented was menorrhagia in 53.3%. All these women underwent D and C followed by medical management or hysterectomy depending upon the diagnosis. The HPE of endometrium was analysed. The HPE of uterus confirmed fibroid uterus and DUB correlated well with ultrasonographic and histopathological examination. Clinical as well as USG proved less useful for diagnosing adenomyosis.

Gupta A et al., (2013)³⁷ studied the causes of abnormal uterine bleeding in perimenopausal women and to correlate their clinical evaluation with ultrasonographic and histopathological examination. The age, parity, menstrual complaints of these patients were noted and clinical diagnosis and ultrasonography were analysed. Finally, histopathology report of the hysterectomy specimen was correlated with the clinical profile

of the patient and ultrasonographic findings. Maximum frequency of abnormal uterine bleeding was seen in the age group 40–45 years. Most of the patients were para 3. Menorrhagia was the commonest complaint & fibroid uterus was responsible for abnormal uterine bleeding in 53% of women. Out of 39 women labelled clinically as dysfunctional uterine bleeding, 8 patients were diagnosed with fibroid uterus on ultrasound and in rest of the 31 patients, no organic cause was found. Out of these 31 patients, 4 patients were diagnosed to have adenomyosis on histopathology and in rest, no gross pathology was detected. Suspected malignancy in all the 3 patients was confirmed on histopathology. Simple endometrial hyperplasia without atypia was present in 19% patients. Clinical, radiological & pathological evaluation correlated well to diagnose fibroids, however clinically as well as ultrasound proved to be of little help in diagnosing adenomyosis

Verma U et al (2014)³⁸ studied the prevalence of abnormal uterine bleeding and its type in perimenopausal women as well as to compare diagnostic efficacy of ultrasonography, hysteroscopy and histopathology. Most of the patients were multiparous, more than 50% belong to socioeconomic class III and IV and mean age was 43.05 ± 4.09 years. Commonest complaint was menorrhagia (45%) followed by metrorrhagia in

19% and menometorrhagia in 14%. Majority of patients (85%) had uterine volume between 151 and 250 cm³. Only three patients had uterine volume more than 252 cm³. Endometrial hyperplasia was diagnosed in 14% with ultrasonography, 11% on hysteroscopy while in 15% on histopathological examination. In perimenopausal women with AUB, ultrasonography should be first investigation because of its freely availability, noninvasiveness and cost effectiveness.

Talukdar B et al., (2016)³⁹ carried out a study among perimenopausal women who underwent hysterectomy for abnormal uterine bleeding (AUB). The clinical presentations, ultrasonographic findings, and histopathological reports of hysterectomy specimen were correlated. Among 103 number of hysterectomized cases for AUB, most of the patients were between 40 and 45 years of age (67.97%) and menorrhagia was the dominant clinical presentation. The majority (45.63%) of cases were diagnosed as fibroid uterus by ultrasonography with 89.13% sensitivity and 89.47% specificity. Histopathological reports of myometrium showed 44.66% fibromyoma, followed by 34.95% of the normal myometrium. Histopathology of endometrium revealed hyperplasia in the most cases (56.31%) where simple typical type was the predominant. In conclusion, uterine fibroid was

the leading cause of AUB and radiological, pathological evaluation correlated well to diagnose fibroid.

Betha K et al., (2017)⁴⁰ conducted a study to categorize women with Abnormal Uterine Bleeding (AUB) according to PALM COEIN classification system and to correlate the clinical diagnosis and histopathologic features of various causes of AUB. A retrospective study was carried out on 250 non-gravid reproductive age women between 25-45 years with complaints of AUB at Medciti Institute of Medical Sciences, a rural tertiary teaching hospital during the period January 2014 to December 2015. The PALM and COEIN groups accounted for 60.4% and 39.6% respectively. Leiomyoma was the most common cause of AUB (30.4%) and Ovulatory disorders was the 2nd most common cause of AUB (13.6%). A total of 172 (68.8%) were classified as having chronic AUB and 78 (31.2%) as having acute AUB. In AUB-L, the difference in clinical and histopathological diagnosis was significant ($p=0.03$). Structural causes of AUB contributed more to the cause of AUB. The PALM COEIN classification system helps us in understanding various etiological causes of AUB and can be used by clinicians and researchers for international comparisons.

Qureshi FU and Yusuf AW (2013)⁴¹conducted a descriptive cross-sectional study comprised of non-gravid women of reproductive age with unpredictable, excessive duration, abnormal volume, and/or abnormal frequency of menses for at least 3 months coming to the outpatient department. The subjects underwent structured history, physical examination and pelvic ultrasonography. Endometrium and hysterectomy specimen were obtained for histopathology where applicable. Possible underlying causes were categorised according to the new classification system. A total of 2109 women comprised 19.6% of total of the 10712 woman who visited the gynecological outpatients clinic, 2109 (19.6%) had abnormal uterine bleeding. PALM-COEIN categorization done in 991(47%) cases that showed 30 (3%) polyp, 15 (15%) adenomyosis, 250 (25%) leiomyoma, 66 (6.6%) malignancy and hyperplasia, 3 (0.3%) coagulopathy, 236 (24%) ovulatory dysfunction, 48 (5%) endometritis, and 53(6%) iatrogenic. The remaining 155 (15%) cases were uncategorised. The classification should facilitate multi-institutional investigation into the epidemiology, etiology and treatment of women with Abnormal Uterine Bleeding.

Bodal VK et al., (2014)⁴² conducted a study to find the incidence of various pathological lesions of endometrium i.e. non-neoplastic as well as neoplastic and to correlate various clinical findings like age, chief complaints, and duration of these complaints with histopathological features. The present study included 300 endometrial biopsies with clinical diagnosis of Dysfunctional uterine bleeding or infertility. The biopsies were processed and sections stained with H and E stain. Special stain (ZiehlNeelsen) was done wherever necessary. Primary infertility (75%) is more common than secondary infertility (25%). Most common presenting age group for DUB cases was 41-50 years (40.91%) and for infertile cases, 26-30 years (47.5%). The most common type of bleeding in DUB cases was menorrhagia (47.73%). Proliferative endometrium (30.45%) was the most common endometrial pattern in DUB cases and secretory endometrium (35%) in infertility cases. Benign neoplasms (endometrial polyp) constituted 3.64% of DUB cases and premalignant conditions (hyperplastic endometrium)-16.36% of DUB cases. Malignant neoplasms (endometrial carcinoma) were found in 3.64% of DUB cases, being most common in 6th decade of life (50%) and postmenopausal bleeding (62.5%) was the most common clinical presentation.

Cheheb N et al., (2016)⁴³ to evaluate female infertility using two complementary methods of exploration: hystero-laparoscopy and endometrial biopsy, to compare histopathological data with those of hystero-laparoscopy findings in the same patients, and finally assess the interest to couple both methods to detect a greater number of pathologies. The study included 64 patients aged 20-43 years with primary or secondary infertility for a period of 3 years ranging from 2012 to 2015 at obstetrics and gynecology department in which all patients were admitted to a hysteroscopy followed by laparoscopy. Endometrial biopsy curettage was performed and sent to the Pathological Anatomy Department for a histopathological study. On 64 infertile women explored, no pathologies were findings in 20 patients (31.3%) to the biopsy and 27 patients (42.2%) by hysteroscopy-laparoscopy. Histopathological study was in favor of dysfunctional endometrium (50%) followed by hyperplasia (10.9%). The lesions findings in the hystero-laparoscopy were in the first place uterine (18.8%) followed by equally between tubal and endometrial pathologies (10.9%). Associated diseases affecting the same organs or more were recorded with a percentage of 7.8%. The two methods have been shown effective and the most of common pathologies findings were uterine and endometrial. They concluded that the endometrial biopsy was more

decisive in the exploration of endometrium pathologies while hystero-laparoscopy is more sensitive for the exploration of uterine, tubal and ovarian pathologies.

Khan R et al., (2016)⁴⁴ did a study to evaluate DUB in various age groups, carry out histopathological study of the endometrium and analyze its clinic-pathological patterns. The study included 500 cases of atypical uterine bleeding, out of which 120 cases of DUB were included based on clinical features and detailed investigations. Hyperplasia was the commonest endometrial pathology (20.5%) followed by luteal phase insufficiency (15.6%) and secretory endometrium (13.7%). Endometritis including tubercular endometritis (12.7%), post abortal (5.8%), proliferative (6.8%), polyp (3.9%), atrophic (3.9%), exogenous hormone changes (2.9%) and anovulatory cycles (6.8%) made up for the remaining lesions. DUB occurs secondary to a wide variety of functional and structural abnormalities, warranting a thorough evaluation especially in perimenopausal females. Menorrhagia is a common symptom and the most likely etiology relates to the patient's age.

Tiwari A et al., (2016)⁴⁵ conducted a study to find out the histopathological pattern of endometrium in abnormal uterine bleeding (AUB) in the light of clinical details. Formalin fixed endometrial specimens

were processed, paraffin embedded, sectioned at 3-4 μm , stained with hematoxylin and eosin, and studied under light microscopy along with their demographics. The study included 100 cases of endometrial biopsy specimens with clinical diagnosis of AUB. Menstrual disturbances was found in wide age range between 17-75 years with the mean age of 45 (SD=13.36) years. Menorrhagia was the commonest (n=60, 60%) clinical presentation. Most (n=85; 85%) endometrium had non-neoplastic lesions. Among them, normal endometrial patterns were commonest (n=50, 50%). Neoplastic lesions (n=15, 15%) were distributed in all menstruation status with majority in postmenopause (n=7, 7%) and included malignant cases (n=5, 5%) among others. They concluded that post-menopausal bleeding was common presentation among women with malignant and premalignant disease which was present in 15% of the cases together. Timely evaluation of AUB by histopathology can be life saving with early tissue diagnosis and management.

Ahmed M et al., (2018)⁴⁶ did a study to find out the morphological pattern of endometrium in infertile women in a tertiary care hospital to find out the causes of infertility and subsequent treatment of the patients. The study included 196 referred cases endometrial curettage or biopsy samples of infertile women, collected between days 21 to 23 of menstrual cycle. The

endometrial samples obtained from patients suffering from diseases other than infertility were excluded from the study. Hematoxylin and Eosin (H&E) stained histopathological slides were prepared from the samples and examined under microscope. Reported results and relevant data were recorded in SPSS data collection sheet and statistical analysis was carried out. A total of 196 cases of endometrial biopsy or curettage samples of both primary and secondary infertile women were studied. Age ranged from 20 years to 40 years with a mean age of 29.91 ± 4.32 years. 70.92% cases presented with primary infertility and 29.08% cases presented with secondary infertility. Proliferative phase/anovulation (41.33%) was found as the most common morphological pattern of endometrium in infertile women followed by secretory phase (40.30%). Endometrial hyperplasia, inadequate sample, nonspecific endometritis and tuberculous endometritis were found in 10.72%, 6.12%, 6.12% and 0.51% cases respectively. In primary infertility, proliferative phase / anovulation (43.17%) was also the predominant pattern followed by secretory phase (37.40%) and endometrial hyperplasia (11.52%). Whereas, secretory phase (47.37%) was the most common pattern of endometrium in secondary infertility, followed by proliferative phase (36.37%) and endometrial hyperplasia (8.77%). Primary infertility was most frequently presented in 26-30 years of

age, whereas, secondary infertility was more prevalent in later age group. Histopathological study of endometrium gives us valuable information of endometrium in infertility. Morphological pattern of endometrium in our study was quite similar to other studies conducted in different countries with some variations.

Vani B et al., (2019)⁴⁷ to evaluate histopathology of endometrium and observe the incidence of various endometrial pathology patterns in different age groups presenting with abnormal uterine bleeding. The most common pattern observed was normal cycling endometrium (56.27%). The other morphological patterns were endometrial hyperplasia (19.48%), disordered proliferative pattern (5.62%), complications of pregnancy (4.76%), benign endometrial polyp (2.6%), chronic endometritis (2.16%) and carcinoma (0.86%). The most common age group presenting with AUB was 40-49 years (47.18%) followed by 30-39years (33.76%). Endometrial causes of AUB and age distribution was statistically significant with P value<0.05. Conclusion: There is an age specific association of endometrial lesions. Atrophy and carcinoma endometrium are predominant in peri-menopausal and post-menopausal age. Endometrial curettings and biopsy proved to be an important diagnostic procedure for assessment and subsequent management of abnormal uterine bleeding.

Ranjan S et al., (2021)⁴⁸ conducted a study on women with abnormal uterine bleeding (AUB) to evaluate the histopathological patterns in endometrial biopsy among different age groups. The clinical history and findings of 100 patients were collected and recorded. Histopathological study of endometrial patterns and age specific correlation was done. Out of a total of 100 patients of AUB, 72 of them had a functional cause and the remaining 28 patients revealed an organic cause. The mean affected age was 40 years with youngest being 21 years old and the oldest patient was 57 years of age. Functional causes constituted 72% and organic lesions were seen in 28% out of which Proliferative phase endometrium was the most common functional lesion observed while endometrial hyperplasia was the commonest organic pathology seen. P value was calculated as <0.008 which was significant using chi square for trend seen in age. Histopathological examination of endometrial biopsy in patients of AUB is considered as a gold standard of patient evaluation, diagnosis and management and avoids any future complications.

Somasundar BSM et al., (2022)⁴⁹ did a study to compare the efficacy of plain cervical dilatation and curettage (D&C) and hysteroscopic-guided biopsy in evaluating endometrial pathology and to compare the histopathology findings of hysterectomy specimen. A total of 100

perimenopausal and postmenopausal women complaining of abnormal uterine bleeding in gynecology OPD were included. Those women who are eligible for diagnostic D&C, cervical dilatation and endometrial curettage were done under i.v. sedation in the operation theater (OT) and the curetting was sent for histopathological examination (HPE). Those women who needs hysteroscopy, it was done under short general anesthesia and the sample was sent for histopathologic examination. Patients for whom hysterectomy was indicated following D&C or hysteroscopy would be followed for the histopathological findings. The cases range in the age-group of 40–55 years who presented with abnormal uterine bleeding (AUB) without local gynecological cause and with failure of medical treatment for at least 3 months. The mean duration between the endometrial curettage and the hysterectomy being 2.5 weeks. The highest correlation was seen in the endometrial phase, followed by complex and then by simple hyperplasia. In conclusion, D&C and hysteroscopy are the two most important diagnostic modalities in perimenopausal and postmenopausal bleeding. Patients for whom ultrasonography showed focal endometrial lesions need further evaluation and hysteroscopy. Factors influencing both the success and the reliability rate should be taken into account before any endometrial biopsy sampling method.

Tilva KK et al., (2022)⁵⁰to evaluate the spectrum of endometrial histology in cases of AUB, to find out age wise incidence of AUB, and to find out age wise incidence of various histological pattern of endometrium in AUB.110 women with a complaint of AUB attending the gynecology outpatient department (OPD) at tertiary care hospital, Rajkot, Gujarat during one year (August 2020 to July 2021). Maximum number of cases of AUB were noted in the age group of (31-40) years (44 cases, 40%). Most common observed histopathological pattern in this study was normal cyclical patterns including proliferative endometrium (34.5%) and secretory endometrium (21%). Histopathological evaluation of endometrium is indicated in women over the age of 35 years presenting with AUB to rule out preneoplastic lesions and malignancies.

PROFORMA

Case Number:

MRD Number:

Name of Patient

Blood Group

D/O

W/O

Residence

Age

Occupation

Contact number

Marital Status

(married/unmarried)

Obstetric History; (normal/caesarean/forceps/no.of abortions)

- Para
- Gravida
- Married for
- Last child birth

Menstrual History

Age at menarche:

9 years	10 years	11 years	12 years	13 years	14 years	15 years or > 15

Duration of cycle length:

<21 days	24 days	28 days	30 days	>35 days	>40 days	>50 days

Duration of periods:

1-2 days	3-4 days	4-5 days	5-6 days	>6 days

- Flow : Normal/Scanty/Excessive
- Passage of clots YES / NO
- Dysmenorrhea : YES / NO
- Intermenstrual bleeding YES / NO
- Post Coital bleeding YES / NO
- Amenorrhea YES / NO

(If yes/ duration)

Past history

- History of hypertension/DM/TB/Jaundice
- History of any surgical intervention
- History of any endocrine disorder
- History of similar history in past with details of treatments given in past

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Personal history

- History of any weight gain/loss
- Dyspareunia
- Unhealthy discharge
- Foul smelling discharge
- Heaviness and discomfort in lower abdomen
- Backache
- Constitutional symptoms
- Sexual history
- Socio economic status

Contraceptive history

- History of intake of contraception (OCP)
- IUCD'S/LNG-IUS
- H/O sterilization

Drug history

- Gonadal steroid therapy (estrogens, progestins, and androgen)
- Antidepressants and ant psychotics
- Tamoxifens, corticosteroids and herbs e.g. ginseng
- Anti-coagulants like warfarin, heparin LMWH

Family History

Diabetes/hypertension/obesity/similar history/endometrial carcinoma/PCOS

GENERAL PHYSICAL EXAMINATION

- General condition
- Body built
- Pulse
- Blood pressure
- Weight
- Height
- Waist circumference
- Hip circumference
- BMI
- Waist hip ratio
- Pallor
- Icterus
- Acne
- Hirsutism
- Acanthosisnigricans
- Lymphadenopathy

Thyroid examination

Breast examination

Abdominal examination

- Inspection
- Palpation
- Percussion
- Auscultation

Local examination

Per speculum examination

Pap smear

Per vaginal examination

Bimanual examination

INVESTIGATIONS

- CBC
- Blood group
- LFT
- KFT
- Pregnancy test

- Blood sugar (fasting/PP)
- Coagulation profile
- Thyroid profile
- Iron profile (Serum Ferritin)
- Lipid profile

Transabdominal ultrasonography

TVS

Hysteroscopy

Endometrial sampling/Biopsy

Histopathological examination

Diagnostic D&C

Laparoscopy

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CONSENT FORM

I _____ D/o, W/O _____

R/O _____ hereby declare that I give informed consent to participate in the thesis study titled **“Histopathological Evaluation of Endometrial Biopsies and Curettage in Abnormal Uterine Bleeding”**.

I give full consent for being enrolled in the above study.

Signature

Name

Date

We have witnessed that the patient signed the above form in the presence of her free will after fully understood its contents.

Signature of the Relative / Witness

Signature of the Staff

Name

Name

Relation

Date

Signature of the Investigator

Name

Date

رضامندی فارم

-----مریض/مریض کا رشتہ دار-----

-----ساکنہ-----

تصدیق کرتا/کرتی ہوں کہ میں طریقہ علاج (معالجہ/ٹیسٹ/جرحی) کی نسبت اپنی مرضی سے پوری طرح اتفاق

کرتا/کرتی ہوں۔ مزید یہ کہ مجھے طریقہ علاج کی یا اس میں استعمال ہونے والی ادویات کی بھرپور جانکاری

دی گئی۔ طریقہ علاج سے منسلق میرے سوالات کا تسلی بخش جواب دیا گیا۔ ڈاکٹر صاحبان میرے علاج

سے منسلق (تصاویر، ٹیسٹ وغیرہ) کسی بھی کانفرنس یا کسی رسالہ میں بغیر کسی رُکاوٹ یا اعتراض کے پیش کر

سکتے ہیں۔

اوپر درج کی ہوئی عبارت مجھے پڑھکر سُنائی گئی اور اپنی مادری زبان میں سمجھائی گئی۔ کوئی بھی امر پوشیدہ نہیں رکھا

گیا۔

-----دستخط مریض یا مریض کا رشتہ دار----- تاریخ-----