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Original Research Article

Study of Histopathological Spectrum of Endometrial Tissue in Patients with Abnormal Uterine Bleeding at Tertiary Care Centre

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Abstract

Background & Methods: The aim of the study is to study of Histopathological spectrum of endometrial tissue in patients with abnormal uterine bleeding. Normal cyclical phases (proliferative and secretory) of the endometrium. Other abnormal physiological changes in the endometrium like: atrophic endometrium, weakly proliferative endometrium, disordered proliferative endometrium and pill endometrium.

Results: For histopathological pattern distribution, maximum patients were observed proliferative phase (61, 40.7%) followed by secretory phase (48, 32.0%), atrophy (17, 11.3%), Endometrial hyperplasia without atypia (12, 8.0%), disordered proliferative phase (4, 2.7%) and chronic endometritis (2, 1.3%) while 1 case for each category viz. acute endometritis, Endometrial hyperplasia with atypia, cystic atrophy, focal squamous metaplasia, granulomatous endometritis and granulomatous tubercular lesion, for each (0.7%) was recorded.

Conclusion: Normal cyclic changes account for the highest proportion of histopathological findings of (72.7%). However, hyperplasia being (8.7%) in this study is an important cause of premenopausal and post-menopausal bleeding. The incidence of proliferative phase (40.7%) followed by secretory phase (32.0%), atrophy (11.3%), and hyperplasia (8.7%) was recorded in this study. The present study shows non-neoplastic and pre-neoplastic lesions are more common in women aged 40–50 years and show a higher incidence of functional endometrial changes. It was recorded that there is a close relationship between age group, clinical diagnosis, and histopathological diagnosis.

Keywords: Histopathological, Spectrum, Endometrial, & Uterine.

Study Design: Cross-sectional study.

1. INTRODUCTION

Abnormal uterine bleeding (AUB) refers to a variety of symptoms, including 'Heavy Menstrual Bleeding' (HMB), characterized by, bleeding that exceeds the 95th percentile of the general population, 'Intermenstrual Bleeding', or a combination of both 'Heavy & Prolonged Menstrual Bleeding'. (1) An estimated 10% to 30% of women in reproductive age worldwide are thought to have

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AUB, with rates peaking during menarche and perimenopause. (2) The impact of abnormal uterine bleeding (AUB) on health-related quality of life (HRQoL) best captures the true nature of this problem. (3)

Haemostasis, vascular tone, and uterine contractions all influence the volume of menstrual flow. Menstrual cycles typically last 4.5–8.0 days, occur on a frequency of 24-38 days, and result in 50–80 ml of blood loss per cycle. Every woman has a unique menstrual cycle experience. As a result, diagnosing abnormal menstrual bleeding‖ requires professionals to conduct an independent evaluation of each patient. The definition of HMB in a research environment is defined as blood loss greater than 80 millilitres per cycle. (4)

Generally speaking, anemia in women caused by iron deficiency was found to be more likely in proportion to the degree of blood loss. As a result, the clinico-pathological range of uterine disorders may be affected, and the chosen course of treatment is primarily determined by the patient's risk profile at the time of presentation. Adolescents frequently experience menstrual cycle issues, with some experiencing severe, persistent, or unpredictable bleeding shortly after menarche. Additionally, the teenagers often report painful and/or irregular periods, but they also occasionally report unpredictable, prolonged, or severe bleeding that could be considered a medical emergency.(5) Anovulation is likely the most common cause of heavy menstrual bleeding in this age group, but it is crucial to rule out other potential causes, such as underlying bleeding disorders.

Endometrial biopsies, which make up at least 20% of gynecologic specimens are routinely evaluated by pathologists. The majority of endometrial biopsies are performed to investigate abnormal uterine bleeding (AUB). The reasons for performing a biopsy and the necessary clinical knowledge can vary widely depending on the patient‘s symptoms, medical history, and other factors. (6)

Across all age ranges, the clinical and laboratory supervision of AUB is designed to evaluate whether the bleeding is caused from a structural disorder (histologically abnormal, such as endometrial polyps, submucosal leiomyomata, inflammatory/infectious, or unopposed estrogen effect) or a functional disorder devoid of a structural abnormality. In rare cases of emergency caused by unusually heavy hypermenorrhea (menorrhagia) or both heavy and frequent bleeding (menometrorrhagia), investigations like ultrasound, hysteroscopy, biopsy, and histological evaluation are used for diagnosis. (7)

2. MATERIAL AND METHODS

Present study was conducted at Department of Pathology in collaboration with the Department of Obstetrics & Gynecology, NCR Institute of Medical Sciences, Meerut for 01 Year. Data were collected using a pre-designed semi-structured study proforma. Patient data were noted on a pre-designed semi-structured Performa. It included:

1. Socio-demographical variables: age, residence, education, occupation.
2. Patterns and duration of abnormal bleeding. The pattern of the bleeding was classified as:

a. Heavy Menstrual Bleeding (HMB)
b. Intermenstrual Bleeding (IMB)
c. Heavy and Prolonged Menstrual Bleeding (HPMB)
d. Irregular Menstrual Bleeding (Irregular MB)
e. Postmenopausal Menstrual Bleeding (PMB)

3. Menstrual history
4. Obstetric history

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5. Physical examination, including pelvic examination.
6. Radiological studies
7. Histopathologic examination

Specimens were received in 10% buffered formalin solution from the department of gynecology and were fixed to be further processed in histopathology laboratory of NCRIMS.
8. Following a thorough examination, the tissue was processed and paraffin blocks were created. These blocks were then sectioned using a microtome, resulting in slices that were 4 to 5 microns thick. After staining with Hematoxylin and Eosin, the samples were analyzed using a light microscope.

Inclusion Criteria

1. Patients above 18 years of age.
2. Patients presenting with abnormal uterine bleeding with probable clinical cause of endometrial pathology underwent endometrial biopsy or hysterectomy.

Exclusion Criteria

1. Patients below 18 years of age.
2. Cases with non-endometrial causes of abnormal uterine bleeding like
Isolated cervical or vaginal and structural abnormalities.
3. Patients with coagulation disorders.
4. Patients with IUCD or on hormonal therapy.
5. Patients with a gestational cause.
6. Autolyzed specimens and sections not having enough material were excluded from the study.

3. RESULT

Table 1: Age Group Distribution among Study Population

Age group (Years)	Frequency	Percent
21-30	7	4.7
31-40	56	37.3
41-50	71	47.3
51-60	12	8.0
61-70	4	2.7
Total	**150**	**100.0**

For age group distribution, maximum patients were age group of 41-50 years (71, 47.3%) followed by 31-40 years (56, 37.3%) while minimum patients were age group of 61-70 years (4, 2.7%). The mean age was 43.13 ± 8.06 years.

Table 2: Residence Distribution among Study Population

Residence	Frequency	Percent
Rural	145	96.7
Urban	5	3.3
Total	**150**	**100.0**

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For residence distribution, maximum patients were from rural area (145, 96.7%) while minimum patients were from urban area (5, 3.3%).

Table 3: History of Symptoms Distribution among Study Population

History	Frequency	Percent
Abdominal pain	33	22.0
Acute Pelvic pain	17	11.3
Acute Stabbing Pain in abdomen	1	0.7
Acyclic bleeding	12	8.0
Chronic pelvic pain	19	12.7
Dyspareunia	6	4.0
Excessive weight loss	2	1.3
Frequent bleeding PV	8	5.3
Frequent menstrual bleeding	1	0.7
Increased duration of flow	10	6.7
Increased variable frequency of flow	1	0.7
Infrequent bleeding PV	27	18.0
Irregular bleeding PV	1	0.7
Post menstrual spotting PV	1	0.7
Postcoital bleeding	2	1.3
Premenstrual bleeding	2	1.3
Premenstrual spotting	1	0.7
Something coming out of vagina	6	4.0
Total	**150**	**100.0**

For history of symptoms distribution, maximum patients were observed abdominal pain (33, 22.0%) followed by infrequent bleeding PV (27, 18.0%), chronic pelvic pain (19, 12.7%), acute pelvic pain (17, 11.3%), acyclic bleeding (12, 8.0%), increased duration of flow (10, 6.7%), frequent bleeding PV (8, 5.3%), something coming out of vagina and Dyspareunia (6, 4.0%) and excessive weight loss, postcoital bleeding and Premenstrual bleeding (2, 1.3%) while 1 case for each category viz. frequent menstrual bleeding, variable frequency of flow, irregular bleeding PV and acute stabbing pain in abdomen (0.7%) was recorded.

Table 4: Pattern of Abnormal Menstrual Bleeding Distribution among Study Population

Pattern of abnormal menstrual bleeding	Frequency	Percent
HMB	71	47.3
HPMB	26	17.3
IMB	11	7.4
IRREG-MB	25	16.7
PMB	17	11.4
Total	**150**	**100.0**

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For pattern of abnormal menstrual bleeding distribution, maximum patients were observed HMB (71, 47.3%) followed by HPMB (26, 17.3%), IRREG-MB (25, 16.7%) and PMB (17, 11.4%) while minimum patients were observed IMB (11, 7.4%).

Table 5: Histopathological Pattern among Study Population

Histopathological pattern	Frequency	Percent
Acute endometritis	1	0.7
Atrophy	17	11.3
Endometrial hyperplasia with atypia	1	0.7
Endometrial Hyperplasia without atypia	12	8.0
Chronic endometritis	2	1.3
Cystic atrophy	1	0.7
Disordered proliferative phase	4	2.7
Focal squamous metaplasia	1	0.7
Granulomatous endometritis	1	0.7
Granulomatous tubercular lesion	1	0.7
Proliferative phase	61	40.7
Secretory phase	48	32.0
Total	**150**	**100**

For histopathological pattern distribution, maximum patients were observed proliferative phase (61, 40.7%) followed by secretory phase (48, 32.0%), atrophy (17, 11.3%), Endometrial hyperplasia without atypia (12, 8.0%), disordered proliferative phase (4, 2.7%) and chronic endometritis (2, 1.3%) while 1 case for each category viz. acute endometritis, Endometrial hyperplasia with atypia, cystic atrophy, focal squamous metaplasia, granulomatous endometritis and granulomatous tubercular lesion, for each (0.7%) was recorded.

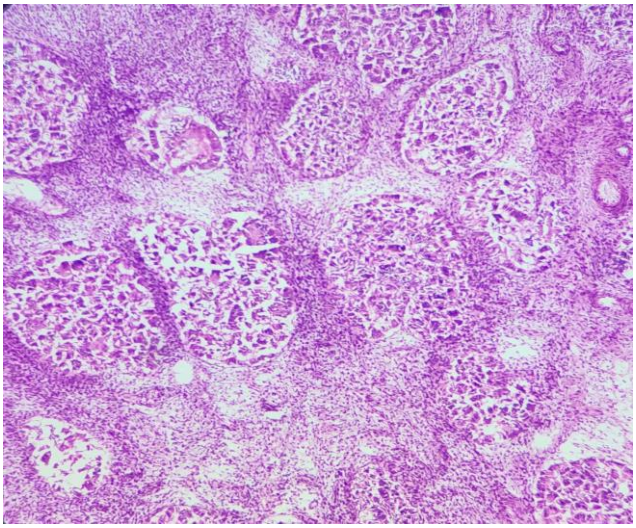

Fig 1 :(I) Endometrial Hyperplasia without Atypia: Closely Packed Endometrial Glands with Some Glandular Complexity, Devoid of Nuclear Atypia (10x Magnification).

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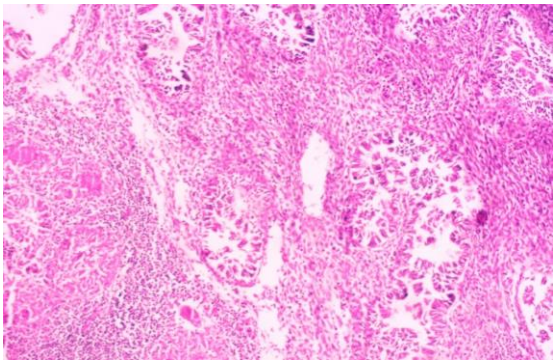

Fig 2: Proliferative Phase Endometrium: Shows Well-Formed Granuloma Comprising of Multiloculated Giant Cells, Epithelioid Cells and Lymphocytes along with Dense Necrosis. (10x Magnification)

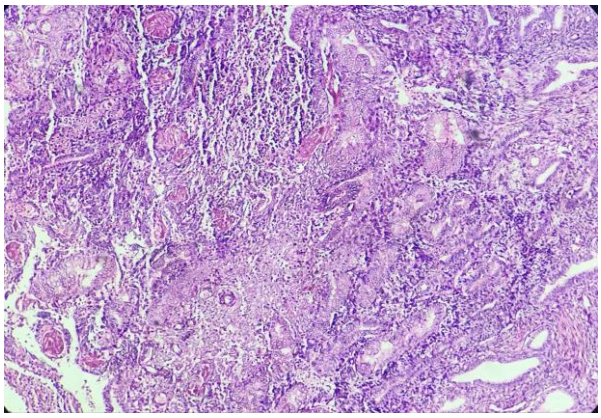

Fig 3: Proliferative Endometrium: Shows Ecstatic Venules that Contain Fibrin Thrombi with Glandular & Stromal Breakdown.

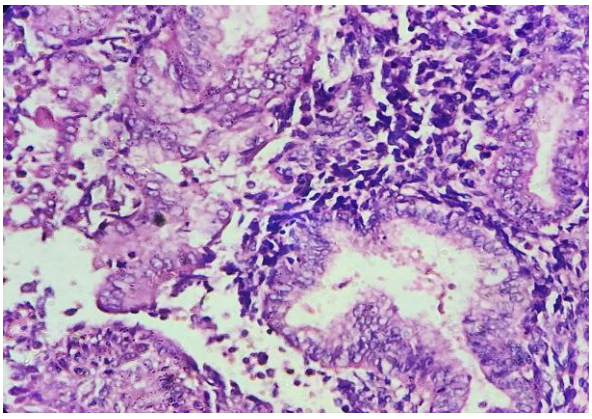

Fig 4: Disordered Proliferative Phase Pattern: the Endometrium Exhibiting from Apparent Anovulatory Bleeding, where the Glands Show Focal Branching and Glandular Dilatation.

4. DISCUSSION

In the present study on abnormal uterine bleeding (AUB), we observed a variety of clinical symptoms among patients. The most prevalent bleeding pattern was infrequent bleeding, affecting (18.0%) of cases, followed by acyclic bleeding at (8.0%) and increased duration of flow at (6.7%). Frequent bleeding was noted in (5.3%) of cases. Less common bleeding patterns included postcoital bleeding and premenstrual bleeding, each present in (1.3%) of

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cases (8). Frequent menstrual bleeding, variable frequency of flow, and irregular bleeding were each observed in (0.7%) of cases. Collectively, these bleeding symptoms accounted for (42.7%) of the cases.

Regarding abdominal symptoms, (22.0%) of patients reported abdominal pain, while chronic pelvic pain was observed in (12.7%) and acute pelvic pain in (11.3%). Stabbing pain in the abdomen was noted in (0.7%), with the total percentage of patients experiencing abdominal pain-related symptoms amounting to (46.7%).

Additional symptoms included the sensation of something coming out of the vagina, reported in (4.0%) of patients suffering from prolapse, and dyspareunia, also noted in (4.0%). Excessive weight loss was recorded in (1.3%) cases (9). These symptoms further enrich the clinical profile of abnormal uterine bleeding, underscoring the diverse manifestations of this condition.

Few studies provide a detailed clinical history of symptoms comparable to those observed in this study. Nevertheless, our results provide important new information about the wide variety and frequency of symptoms linked to abnormal uterine bleeding (AUB) (10).

This enhanced understanding is crucial for improving the diagnosis, management, and treatment of AUB (11). In present study, for clinical association distribution, maximum patients were observed uterine fibroid (40.0%) following AUB (22.0%), Adenomyosis (18.0%), acute AUB (6.0%), Endometriosis (4.7%), 2nd degree and 3rd degree UV prolapse, Cervical polyp and ovarian cancer (2.0%), while 1 case for each category viz. endocervical polyp, endometrial polyp (0.7%) was recorded(12).

5. CONCLUSION

Endometrium is a dynamic tissue that keeps on undergoing cyclical changes. The presentation of each phase is different and unique. So, any change in the presentation of the phase can be clearly pointed out and can be further managed.

Normal cyclic changes account for the highest proportion of histopathological findings of (72.7%). However, hyperplasia being (8.7%) in this study is an important cause of premenopausal and post-menopausal bleeding. The incidence of proliferative phase (40.7%) followed by secretory phase (32.0%), atrophy (11.3%), and hyperplasia (8.7%) was recorded in this study. The present study shows non-neoplastic and pre-neoplastic lesions are more common in women aged 40–50 years and show a higher incidence of functional endometrial changes. It was recorded that there is a close relationship between age group, clinical diagnosis, and histopathological diagnosis.

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