

**Research Article****Spectrum of Endometrial Histopathology in Women Presenting with Abnormal Uterine Bleeding**

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**Abstract:** Abnormal uterine bleeding is the common presenting complaint in the Gynaecology outpatient department in all age groups. Histopathological evaluation of the endometrial samples plays a significant role in the diagnosis of abnormal uterine bleeding. This study was carried out with an aim to determine the histopathological pattern of the endometrium in women presenting with abnormal uterine bleeding. A retrospective analysis of 250 patients presenting with abnormal uterine bleeding was done who underwent endometrial sampling during a 6 month period from January 2014 to June 2014 at the Zenana Hospital, SMS Medical College, Jaipur. Endometrial tissue collected had been sent for histopathology. The age of patients ranged from 25 to 60 years. Maximum number of cases 130 (52%) were seen from perimenopausal age group where proliferative endometrium was predominant (53.08%), followed by endometrial hyperplasia in (32.31%) cases, secretory phase seen in (10.77%) of cases. Atrophic endometrium (30.77%) was the most frequent finding followed by endometrial hyperplasia (26.15%) and endometrial metaplasia (4.62%) in postmenopausal age group. In reproductive age group normal secretory phase was seen in (47.27%) of cases followed by disordered proliferative endometrium in (18.18%) cases. We concluded that a thorough histopathological workup and clinical correlation is mandatory in cases of abnormal uterine bleeding above the age of 40 years to find out organic lesions.

**Keywords:** Abnormal Uterine Bleeding, Histopathology, Perimenopausal age, Endometrium.

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**INTRODUCTION**

The endometrium is uniquely endowed throughout the female reproductive lifespan with complex of periodic proliferation, differentiation, breakdown and regeneration [1]. Menstruation is the physiologic shedding of the endometrium associated with uterine bleeding that occurs at monthly intervals from menarche to menopause [2]. Abnormal uterine bleeding (AUB) is a very common gynaecological condition affecting all age groups [3]. AUB is defined as changes in frequency of menses, duration of flow or amount of blood flow [3]. Dysfunctional Uterine Bleeding is diagnosis of exclusion when there is no underlying medical pathology [4]. During climacteric, ovarian activity is declined. Initially ovulation fails, corpus luteum does not form and progesterone is not secreted by the ovary resulting in shortening of perimenopausal menstrual cycles that are often anovulatory and irregular [5]. The increased risk of endometrial hyperplasia and endometrial carcinoma is more evident in perimenopausal and postmenopausal women with abnormal uterine bleeding [6]. Histopathological examination of endometrial sample is used for the diagnosis of majority of lesions.

Endometrial biopsy and curettage are important sampling methods [7].

**Aim and Objective**

This study was carried out to determine the histopathological pattern of the endometrium in women of various age groups presenting with abnormal uterine bleeding.

**MATERIALS AND METHODS**

The retrospective analysis of 250 patients presenting with abnormal uterine bleeding was done who underwent endometrial sampling during a 6 month period from Jan 2014 to June 2014 at Department of obstetrics and Gynaecology Zenana Hospital, SMS Medical College Jaipur. Endometrial tissue collected by sampling procedure such as Dilatation and Curettage (D&C), endometrial biopsies had been sent to the pathology lab for evaluation in 10% Formalin.

The age of patient ranged from 25 to 65 years. Detailed clinical history like age, menstrual status including pattern, period & regularity of cycle were obtained relevant findings of general, systemic examination were recorded.

**RESULTS**

Endometrial pathology as a cause of AUB was observed in 250 patient. Evaluation of the endometrium revealed various patterns on histopathology, functional causes accounted for the majority of diagnosis.

Sociodemographic profile of patient presenting Abnormal uterine bleeding as shown in Table no. 1 , showed that maximum number of cases (52%) were

from perimenopausal age group with mean age  $45.8 \pm 1.53$ . Maximum number of cases belonged to para 4 or more. Maximum number of patient belonged to Hindu religion. The most common clinical presentation was represented by heavy menstrual bleeding in 46.4% patients followed by frequent menstrual bleeding in 42 % cases, heavy or prolonged menstrual bleeding in 33.6% cases, postmenopausal bleeding in 26 % among others shown in Table 2.

**Table 1: Socio demographic profile of patient presenting with abnormal uterine bleeding**

Age (in years)	25-30	30-35	35-40	40-45	45-50	50-55	>55
	10 (4%)	12 (48%)	33 (13.2%)	68 (27.2%)	62 (24.8%)	36 (14.4%)	29 (11.6%)
Parity	1	2	3	≥4			
	10 (4%)	60 (24%)	87 (34.8%)	93 (37.2%)			
Religion	Hindu	Muslim					
	210 (84%)	40 (16%)					

**Table 2: According to complains**

Sl. No.	Chief Complains	Number of Patients
1.	Heavy Menstrual Bleeding	116 (46.4%)
2.	Frequent Menstrual Bleeding	105 (42%)
3.	Heavy or Prolonged Bleeding	84 (33.6%)
4.	Intermenstrual Bleeding	56 (22.4%)
5.	Infrequent Menstrual Bleeding	20 (8%)
6.	Postmenopausal bleeding	65 (26%)

**Table 3: According to endometrial histopathology report**

Sl. No.	Endometrial histopathology report	Number of patient	Perimenopausal age group	Postmenopausal age group	Reproductive age group
1.	Proliferative Endometrium	93	69 (53.08%)	14 (21.54%)	10 (18.18%)
2.	Secretory Phase	46	14 (10.77%)	6 (9.23%)	26 (47.27%)
3.	Endometrial Hyperplasia	63	42 (32.31%)	17 (26.15%)	4 (7.27%)
4.	Menstrual Phase	25	5 (3.65%)	5 (7.69%)	15 (27%)
5.	Atrophic Endometrium	20	-	20 (30.77%)	-
6.	Endometrial Metaplasia	3	-	3 (4.62%)	-
	Total number of patients	250	130	65	55

As shown in Table 3, in perimenopausal age group proliferative endometrium was predominant histopathological pattern (53.08%), followed by endometrial hyperplasia (32.31%) cases, secretory phase in (10.77%) of cases.

Atrophic endometrium (30.77%) cases were the most frequent finding followed by endometrial hyperplasia (26.15%) cases in postmenopausal age group. Endometrial metaplasia (4.62%) cases were reported in postmenopausal age group (Table 3).

In reproductive age group patient presented with secretory phase in (47.27%) of cases and normal menstrual phase followed by proliferative endometrium in (18.18%) of cases (table 3).

**DISCUSSION**

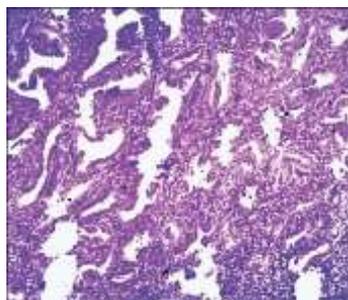
The endometrium is a remarkably dynamic tissue undergoing regular cyclical changes in response to the recurrent hormonal changes of the ovulatory cycles [8].

Abnormal uterine bleeding occurs as heavy, prolonged or acyclic flow at menopausal transition or as spotting or minimal bleeding at post-menopausal period needs thorough evaluation, since it may be clinical manifestation pointing towards endometrial cancer [9].

According to WHO the endometrial hyperplasia are classified as simple or complex. It is based on the absence or presence of architectural abnormalities like glandular complexity and crowding, further designated as atypical if they show nuclear atypia [1].



**Fig. 1: Microphotograph of simple cystic hyperplasia showing few glands are large and cystically dilated and others are normal proliferative glands with compact stroma (H&E x 100) [10]**



**Fig. 2: Microphotograph of complex hyperplasia showing crowded, irregular glands lined by columnar epithelium with back to back arrangement and without nuclear atypia (H&E x 100) [10]**



**Fig. 3: Microphotograph of complex hyperplasia with atypia showing intense crowding of glands lined by stratified epithelium with loss of polarity, reduction the intervening stroma and show nuclear atypia (H&E x 100) [10]**

In current study 250 specimens of endometrium (curettage /biopsy) were evaluated in order to find age, clinical and pathological features. The incidence of abnormal uterine bleeding was more in perimenopausal age group than postmenopausal age group, may be due to earlier evaluation and treatment of these patient [10].

In our study majority of patients were between 40 -49 years (52%) age group, with mean parity  $45.8 \pm 1.53$ . The major disorders increase with advancing age, maximum number of cases belonged to para 4 or more. The most common symptoms were heavy menstrual bleeding (46.4%), followed by frequent menstrual bleeding (42%) and postmenopausal bleeding (26%), that were in accordance to previous studies [10-13].

In our study of perimenopausal age group, proliferative endometrium was observed in (53.08%) of cases which was higher than reported by Khare *et al.* (21.2%) [7], Damle RP *et al.* (35.09%) [10], Dungal G (38.5%) [14] and Bhatta S and Sinha AK (29.16%) [15]. In postmenopausal age group 21.54% cases of proliferative endometrium seen. Bleeding in the proliferative phase may be due to anovulatory cycle in such cases shows progressive rise of estrogen to comparatively high levels, which is then followed by a sudden fall in estrogen due to feedback inhibition of pituitary or of FSH secretion and bleeding results.

Secretory endometrium observed in (10.77%) of cases in perimenopausal age group similar finding seen in study by Damle RP [10] reported 7.95% cases. In reproductive age group 47.27% cases of secretory endometrium seen. Bleeding in the secretory phase is due to ovulatory dysfunction uterine bleeding. This ovulatory bleeding is explained by the inability of the corpus luteum to synthesize adequate amount of progesterone, although it remains active throughout the entire period of 12-14 days. The exact aetiology of ovulatory bleeding can be further clarified by daily serum progesterone assay. The second most common lesion was simple endometrial hyperplasia (32.31%) in perimenopausal age group which was similar to study of Khare *et al.* [7] (36.2%); and higher than Dungal G [14] (23%) and lower than that reported by Doraiswami S *et al.* [16] observed 68% incidence of endometrial Hyperplasia in 40-49 years of age group. In post-menopausal age group 26.15% cases of complex hyperplasia with or without atypia was seen. Endometrial hyperplasia is commonly seen in perimenopausal age group due to failure of ovulation. Persistent unripened follicles expose the endometrium to excessive and prolonged estrogenic action.

Atrophic endometrium (30.77%) cases was seen predominantly in postmenopausal age group due to absence of estrogenic stimulation leading to thin atrophic endometrium susceptible to minor injury [18]. Lidor *et al.* [19] (45%), Gredmark *et al.* [20] (50%)

studied that atrophic endometrium was most common cause of post menopausal bleeding.

Endometrial metaplasia seen in (4.62%) cases in post-menopausal age group, similar results were also reported by Khare *et al.* [7], Dangal G [14], Forae and Aligbe [17].

## CONCLUSION

The histopathological study of endometrium in females with abnormal uterine bleeding above the age of 40 years plays an important role in diagnosing various histological patterns and aetiopathological factors. Hence histopathological examination is mandatory, in cases of peri-menopausal and post-menopausal abnormal uterine bleeding. It gives bright avenues not only to find out cases in which organic lesions like polyps, hyperplasia can be detected but also helps to search out early atypical hyperplasia and cancer of endometrium which has excellent prognosis if detected early.

## REFERENCES

1. Tavassoli FA, Devilee P; Pathology and genetics of tumours of the breast and female genital organs. Tumors of the uterine corpus. In WHO classifications of tumours. IARC Press, Lyon France, 2003: 221-232.
2. Rosai J; Female reproductive system – Uterus – corpus. In Rosai and Ackerman's surgical pathology. 9<sup>th</sup> edition, Volume 2, Elsevier, A division of Reed Elsevier, India Private limited, New Delhi, 2004: 1569-635.
3. Awwad JT, Toth TL, Schiff I; Abnormal uterine bleeding in the perimenopause. International Fertility & Menopausal Studies, 1993; 38(5): 261-269.
4. Speroff L, Fritz MA; Menopause and the perimenopausal transition. In Clinical gynaecological endocrinology and infertility. 7<sup>th</sup> edition, Jaypee Brothers Med Publishers (P)Ltd., 2005: 621-688.
5. Padubidri VG, Daftary SN; Howkins and Bourne Shaw's Textbook of Gynaecology. 14<sup>th</sup> edition, Perimenopause, Menopause, Premature menopause and Post-menopausal Bleeding. 52-62.
6. Kumar A, Mittal S; Endometrial sampling: How? & why? Obs and Gynae Today, 2007; 12(6): 284-287.
7. Khare A, Bansal R, Sharma P, Elhence N; Morphological spectrum of endometrium in patients presenting with Dysfunctional uterine bleeding. People's Journal of Scientific Research, 2012; 5: 13-16.
8. Buckley CH, Fox H; Biopsy pathology of the endometrium. In Gottlieb LS, Neville AM, Walker C editors; The anatomy and histology of the endometrium. 1989: 11-29.
9. Bharani B, Phatak SR; Feasibility and yield of endometrial biopsy using suction curette device for evaluation of abnormal pre and postmenopausal bleeding. J Obstet Gynecol India, 2008; 58(4): 322-326.
10. Damle RP, Dravid NV, Suryawanshi KH, Gadre AS, Bagale PS, Ahire N; Clinicopathological spectrum of endometrial changes in perimenopausal & menopausal uterine bleeding. J of clinical & Diagnostic Research, 2013; 7(12): 2774-2776.
11. Sagar S; Clinicopathological correlation of abnormal uterine bleeding at the age of 45 years and above. J Obstet Gynecol India, 1980: 165-169.
12. Jetley S, Rana S, Jairajpuri ZS; Morphological spectrum of endometrial pathology in middle aged women atypical uterine bleeding. J of Midlife Health, 2013; 4(4): 216-220.
13. Samal S, Gupta U, Jain N, Samal N; Clinicopathological Correlation of Ovaries and Endometrium in Dysfunctional Uterine Bleeding. J Obstet Gynecol., 2000; 50(4):79-83.
14. Dangal G; A study of endometrium in patients with abnormal uterine bleeding at Chitwan valley. Kathmandu University Medical Journal, 2003; 1(2): 110-112.
15. Bhatta S, Sinha AK; Histopathological study of endometrium in abnormal uterine bleeding. J of Pathology Nepal, 2012; 2(4): 297-300.
16. Doraiswami S, Johnson T, Rao S, Rajkumar A, Vijayaraghavan J, Panicker VK; Study of endometrial pathology in abnormal uterine bleeding. J of Obstet & Gynae of India, 2011; 61(4): 426-430.
17. Forae GD, Aligbe JU; Histopathological patterns of endometrial lesions in patients with abnormal uterine bleeding in a cosmopolitan Population. J Basic Clin Reprod Sci., 2013; 2(2): 101-104.
18. Archer DF, McIntyre-Seltman K, Wilborn WW Jr, Dowling EA, Cone F, Creasy GW *et al.*; Endometrial morphology in asymptomatic postmenopausal women. AM J Obstet Gynecol., 1991; 165(2): 317-322.
19. Lidor A, Ismajovich B, Confino E, David MP *et al.*; Histopathological findings in 226 women with perimenopausal uterine bleeding. Acta Obstet Gynecol Scand., 1986; 65(1): 41-43.
20. Gredmark T, Kvint S, Havel G, Mattsson LA; Histopathological findings in women with post menopausal bleeding. Br J Obstet Gynecol., 1995; 102(2): 133-136.