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Histopathological spectrum of endometrial biopsies in abnormal uterine bleeding: A one year experience in a tertiary care centre

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Abstract
Background: Abnormal uterine bleeding (AUB) shows spectrum of patterns on histopathology and pathologist plays a very vital role in reporting of endometrial biopsies and helps in differentiating non-neoplastic lesion from neoplastic lesions, early detection of the precursor lesions and exclusion of malignancy. The aim of this study is to study the spectrum of endometrial patterns in women with AUB and to correlate it with the different age groups.
Materials and Methods: 272 samples of endometrial biopsies with AUB were received from the gynaecology department, processed and stained with hematoxylin & eosin and subjected to histopathological examination.
Results: The peak incidence is observed in the age group of 41-50 years. The most common histomorphological pattern is proliferative pattern. 66 cases (24.26%) show endometrial hyperplasia out of which 8cases show atypia. 6 cases of endometrial carcinoma were reported and most of them were present in postmenopausal age. Pill endometrium and chronic endometritis were not reported in postmenopausal age group and all 3 cases of atrophic endometrium were reported in postmenopausal age group.
Conclusion: AUB significantly affects the quality life of women and leads to anemia. Hence histopathological examination should be considered which plays a critical role in early diagnosis of endometrial pathology and to provide appropriate gynaecological management.

Keywords: AUB, endometrial biopsy, endometrial hyperplasia, endometrial carcinoma, proliferative phase, secretory phase
Abbreviations: AUB – abnormal uterine bleeding, DUB – dysfunctional uterine bleeding

Introduction
Endometrial diseases are seen in women across all age groups and are a leading cause of increased maternal morbidity and mortality. The majority of females with endometrial diseases present mostly with abnormal uterine bleeding (AUB) [1, 2]. Thus, AUB calls for the need of urgent diagnosis. AUB - is a term used to describe any bleeding that does not fall within the normal ranges for amount, frequency, duration, or cyclicity. The most common presenting symptoms are menorrhagia, polymenorrhea, metrorrhagia, and intermenstrual bleeding. Dilatation and curettage [3] (D and C) is the mainstay of endometrial sampling. D and C also let for a fractional curettage with separate sampling of both endometrial and endocervical tissue. The underlying disease can be detected by histological variations of endometrium taking into account the age of the woman, the phase of her menstrual cycle, and use of any exogenous hormones. Pregnancy-related and dysfunctional uterine bleeding are more common in patients with younger age group, whereas atrophy and organic lesions become more frequent in older individuals. Hyperplasia is found in up to 16% and endometrial carcinoma in fewer than 10% of postmenopausal patients undergoing biopsy [4, 5]. Patients with a history of anovulation, obesity, hypertension, diabetes, and exogenous estrogen use are also at an increased risk for hyperplasia and adenocarcinoma. The aim of this study is to evaluate spectrum of endometrial patterns in women with AUB and to correlate with different age groups i.e. reproductive, perimenopausal and postmenopausal age groups.

Materials and Methods
The study is conducted in the Department of Pathology in a tertiary care centre.

A total number of 265 cases of endometrial biopsies received from the obstetrics and gynaecology department from February 2020 to January 2021 are subjected to histopathological evaluation. The endometrial samples received were fixed in 10% formalin. The fixed tissue is subjected to processing, paraffin blocks made and sectioned under microtomy (4 to 5 microns thickness), stained with Hematoxylin and Eosin stain and evaluated under light microscope. Histopathological evaluation of endometrial biopsies was done and clinical correlation made. The endometrial samples are categorised in to reproductive (18-40 years), perimenopausal (41-50 years), and postmenopausal (>50 years) based on patient age groups and correlated with histomorphological pattern.

Results

The study comprises 272 endometrial biopsies which were diagnosed as AUB. The peak incidence is seen in age group of 41-50 years(40.4%) (Table 1). The predominant histomorphological pattern observed is proliferative pattern (46.69%) followed by endometrial hyperplasia (21.3%) and the least common pattern is atrophic endometrium (1.1%) (Table 2). The endometrial biopsies are grouped in to reproductive, perimenopausal and postmenopausal group based on the age of the patient and correlated with endometrial patterns (Table 3).

Discussion

AUB is the most frequently presenting complaint among gynaecology out patients and endometrial samplings from these cases are routinely received in histopathology. The histopathological reporting of endometrium is highly subjective and is of great challenge to reporting pathologist due to its dynamic cyclical changes and spectrum of histomorphological pattern in response to hormones. The pathologist plays a significant role in early detection of endometrial precursor lesions and exclusion of malignancy. The term abnormal uterine bleeding refers to an excessive and irregular uterine bleeding that does not fulfill the criteria for normal menstrual bleeding and it is because of reproductive, iatrogenic and systemic causes [6]. AUB without any underlying organic cause is by exclusion termed as dysfunctional uterine bleeding (DUB). To diagnose the cause of AUB is of great importance as it leads to anemia and significantly affects the quality of life [7].

In our study of 272 cases, the peak incidence is seen among the age group of 41-50 years (110 cases, 40.4%) It is in concordance to other studies by Sharma K *et al*. (37.26%), Singh S *et al*. (34%), Puvitha R.D *et al*. (48.70%), Samal R *et al*., Bindroo S *et al*. (43.2%) [8–12]. Histopathological examination of the endometrial biopsies shows spectrum of patterns in which normal cyclical pattern i.e. proliferative and secretory phase of endometrium (163/272, 60%) is the most recurrent and predominantly observed in reproductive (82/121, 67.7%) and perimenopausal (62/110, 56.36%) age groups. Similar results were reported in study by Sharma K *et al*. which shows 62.19% cases of normal cyclical pattern [8]. Proliferative pattern is the dominant histological pattern in our study and it is comparable to the study by Singh S *et al*. [9].

Disordered proliferative pattern (DPE) is characterised by the absence of uniform glandular development and resembles simple hyperplasia but it is focal in the process rather than diffuse [13]. In our study, 8 cases (2.9%) show DPE which is in concordance to the study by Prabha G *et al*., which shows 5 cases (4%) and the incidence is high among postmenopausal age group [14]. It is important to diagnose DPE at an early stage to prevent the disease progression.

It is very important for pathologists to diagnose endometrial hyperplasia, the precursor lesion of endometrial carcinoma. The overall risk of progression of endometrial hyperplasia to malignancy is 5-10% [15]. Simple hyperplasia without atypia, complex hyperplasia without atypia, simple hyperplasia with atypia and complex hyperplasia with atypia have variable progression risks of 1%, 3%, 8%, and 29%, respectively, to malignancy [16]. In our study Endometrial hyperplasia is the second dominant pattern(66/272 cases, 24.26%). 90% cases of endometrial hyperplasia shows no atypia and 10% shows atypia as observed in a study by Sharma K *et al*. [8]. The incidence of endometrial malignancy is low (2.2%) in our study which is comparable to study by Dwivedi S. S *et al*. (1.85%) and seen in postmenopausal age group and perimeniopausal age group [16].

Endometrial polyp is the benign outgrowth from the uterine cavity composed of glands, stroma and blood vessels [17]. In our study 2.2% shows endometrial polyp which is comparable to the study by Sharma K *et al*., (10 cases, 2.73%) and predominantly seen in the reproductive and perimenopausal age group [8].

Chronic endometritis is the third dominant histologic pattern seen in our study (5.5%). It is the inflammatory endometrium infiltrated by plasma cells [18]. The incidence in our study is high among the reproductive age group as observed in the study by Samal R *et al*. Atrophic Endometrium is due to estrogen deprival in the menopausal period and the rupture of dilated venules beneath thin endometrium leads to abnormal uterine bleeding [19]. In our study 3 cases of atrophic endometrium seen and all are present in postmenopausal age group. No cases of atrophic pattern have been reported in the reproductive and perimenopausal age group and the same is observed in study by Prabha G *et al*.

Pill endometrium is characterised by atrophic glands, pseudodecidualization along with inflammatory infiltrate due to exogenous hormonal treatment containing progesterone.1.8% of these cases were reported in our study. In the study by Sharma K *et al*., 12 cases (3.28%) of pill endometrium have been reported and highest is observed in reproductive age group and cases are not reported in postmenopausal age group which is comparable to our study [8].

Table 1: Age wise distribution of endometrial biopsies in AUB

AGE (years)	No. of cases (N)	Percentage (%)
≤20	3	1.1
21-30	27	9.9
31-40	91	33.4
41-50	110	40.4
51-60	29	10.6
>60	12	4.4
TOTAL	272	100

Table 2: Distribution of histomorphological spectrum of endometrial biopsies

Histomorphological Pattern	No of Cases (N)	Percentage (%)
Proliferative Endometrium	127	46.69
Secretory Endometrium	36	13.23
Disordered Proliferative Endometrium	8	2.9
Pill Endometrium	5	1.8
Atrophic Endometrium	3	1.1
Endometrial Polyp	6	2.2
Endometrial Hyperplasia without Atypia	58	21.3
Endometrial Hyperplasia with Atypia	8	2.9
Endometrial Carcinoma	6	2.2
Chronic Endometritis	15	5.5
Total	272	100

Table 3: Age wise distribution of histomorphological patterns of endometrium

Histomorphological Pattern	Reproductive (18-40 Years)	Perimenopausal (41-50 Years)	Postmenopausal (>50 Years)
Proliferative Endometrium	64[52.8%]	48[43.6%]	15[36.5%]
Secretory Endometrium	18[14.8%]	14[12.7%]	4[9.7%]
Disordered Proliferative Endometrium	1[0.8%]	2[1.81%]	5[12.19%]
Pill Endometrium	1[0.8%]	4[3.6%]	-
Atrophic Endometrium	-	-	3[7.3%]
Endometrial Polyp	3[2.4%]	2[1.8%]	1[2.4%]
Endometrial Hyperplasia without Atypia	22[18.18%]	29[26.3%]	7[17.07%]
Endometrial Hyperplasia with Atypia	3[2.4%]	3[2.7%]	2[4.87%]
Endometrial Carcinoma	-	2[1.8%]	4[9.75%]
Chronic Endometritis	9[7.4%]	6[5.4%]	-
Total	121	110	41

Conclusion

AUB significantly affects the quality life of women and results in anemia. Endometrial sampling should be considered in perimenopausal and postmenopausal age group and in reproductive age group not responding to medical treatment. Hence histopathological examination plays a critical role in early diagnosis of endometrial pathology and to provide appropriate gynaecological management.

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References

1. Sarwar A, Haque A. Types and frequencies of pathologies in endometrial curretings of abnormal uterine bleeding. Int J Pathol. 2005;3:65-70. 2.
2. Crum CP, Hornstein MD, Nucci MR, Mutter GL. Hertig and beyond: A systematic and practical approach to the endometrial biopsy. Adv Anat Pathol. 2003;10(6):301-18.
3. Khare A, Bansal R, Sharma S, Elhence P, Makkar S, Tyagi Y. Morphological spectrum of endometrium in patients presenting with dysfunctional uterine bleeding. Peoples J Sci Res 2012;5(2):13-6.
4. ACOG Committee on Practice Bulletins - Gynecology. American College of Obstetricians and Gynecologists. ACOG practice bulletin: Management of anovulatory bleeding. Int J Gynaecol Obstet 2001;72(3):263-71. 5.
5. Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. CA Cancer J Clin. 2011;61(2):69-90.
6. Farrukh JB, Towriss K, Mckee N. Abnormal uterine bleeding: Taking the stress out of controlling the flow. Can Fam Physician 2015;61(8):693-700.
7. Inal ZO, Inal HA, Kucukosmanoglu I, Kucukkendirci H. Assessment of Endometrial Sampling and Histopathological Results: Analysis of 4,247 Cases. Eurasian J Med 2017;49(1):44-7.
8. Sharma K, Rasania A. Clinicopathological spectrum of endometrial biopsies in a tertiary care center. Int J Sci Res 2019;8:4-7.
9. Singh S, Pandey P, Agarwal S, Swarn K, Singh S. Spectrum of uterine lesions presenting as abnormal uterine bleeding in a rural north Indian population: a study from tertiary care center. Int J Res Med Sci 2016;4(8):3250-4.
10. Elavarasan RPT, Shruthi M, Shylaja S. Histopathological Study of Endometrium in Abnormal Uterine Bleeding An Experience in a Tertiary Care Centre of Rural South India. National Journal of Basic Medical Sciences 2017;8(1):32-38.
11. Samal R, Vaithy A, Shanmugasamy, Habeebullah S. Clinicopathological analysis of abnormal uterine bleeding in reproductive and post menopausal women in a tertiary care centre of south eastern part of India. Indian J Obstet Gynecol Res 2020;7(1):66-70.
12. Bindroo S, Garg M, TKaur. Histopathological spectrum of endometrium in abnormal uterine bleeding. Int J Reprod, Contracept, Obstet Gynecol 2018;7(9):3633-7.
13. Doraiswami S, Johnson T, Rao S, Rajkumar A, Vijayaraghavan J, Panicker VK. Study of Endometrial Pathology in Abnormal Uterine Bleeding. J Obstet Gynecol India 2011;61(4):426-30.
14. Prabha G, Murugesan M. Study of Histomorphological Patterns of Abnormal Uterine Bleeding On Endometrial Biopsies in a Tertiary Care Center. J Dent Med Sci. 2019;18(2):20-4.
15. Sajitha K, Shetty KJ, Hegde P, KishanPrasad HL, Padma SK, Permi HS. Study of histopathological patterns of endometrium in abnormal uterine bleeding. CHRISMED J Health Res 2014;1(2):76.
16. Dwivedi SS, Bajpai M, Bhushan I, Satkirti A. Spectrum

of endometrial lesions observed on histopathological examination of endometrial samples in women with abnormal uterine bleeding. Int J Res Med Sci 2019;7(11):4124-8.
17. Nijkang NP, Anderson L, Markham R, Manconi F. Endometrial polyps: Pathogenesis, sequelae and treatment. SAGE Open Med 2019, 7. doi:10.1177/2050312119848247.
18. Kimura F, Takebayashi A, Ishida M, Nakamura A, Kitazawa J, Morimune A *et al*. Review: Chronic endometritis and its effect on reproduction. J Obstet Gynaecol Res 2019;45(5):951-60.
19. Baral R, Pudasini S. Histopathological pattern of endometrial samples in abnormal uterine bleeding. J Path Nepal 2011;1:13-9.