International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Priya M et al. Int J Reprod Contracept Obstet Gynecol. 2022 Aug;11(8):2194-2198
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20221936

Original Research Article

A retrospective study on endometrial patterns in abnormal uterine bleeding

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Received: 03 June 2022
Revised: 09 July 2022
Accepted: 11 July 2022

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ABSTRACT

Background: To determine the type of endometrial patterns of the different age categories of women who presented as a case of abnormal uterine bleeding.
Methods: This is a retrospective study conducted on 105 patients who presented with abnormal uterine bleeding who underwent fractional curettage in our hospital**.** The data on their age, presenting complaints, and comorbidities of all the women were collected. The patterns of endometrial changes were studied and classified.
Results: The most common histopathological findings were anovulatory shedding (34.3%) and irregular shedding (18.1%). The other findings include irregular ripening, papillary endocervicitis, endocervicitis, pill endometrium, atrophic endometrium, squamous metaplasia, and endometrial hyperplasia. The most common malignant change seen was endometrioid carcinoma which was seen in women over 40 years of age.
Conclusions: Histopathological examination of the endometrium shows a clear-cut differentiation between physiological and malignancy changes in the endometrium. Hence, endometrial sampling is considered the golden tool for accurate analysis of the endometrium.

Keywords: Endometrium, Histopathology, Curettings, Bleeding

INTRODUCTION

Abnormal uterine bleeding is defined as "bleeding from the uterine corpus that is abnormal in volume, regularity and/or timing that has been present for the majority of the last 6 months".[1] Abnormal uterine bleeding contributes to one-third of the gynaecology outpatient visits.[2] There are many causes of abnormal uterine bleeding and they are broadly divided into organic and inorganic causes. Some of the pathologies responsible for abnormal uterine bleeding include fibroid uterus, adenomyosis, pelvic infections, polyp, bleeding disorders, etc.[3] Endometrial sampling obtained by fractional curettage is considered the most easily accessible, cheap method of diagnosis of uterine pathologies. The sensitivity of the method is around 96%. This study was done to determine the type of endometrial patterns of different age groups of women with abnormal uterine bleeding.

METHODS

This is a retrospective cross-sectional study conducted among women who came with heavy menstrual bleeding to the gynaecology department of Chettinad hospital and research institute between August 2019 to August 2020. All the women between 20 to 49 years of age who

presented with complaints of heavy menstrual bleeding and got admitted to the gynaecology ward and underwent fractional curettage for the same were included in the study. The patients who were pregnant had acute pelvic inflammatory disease, coagulation disorder and those who had IUCD in situ were excluded from the study. The data on their age, presenting complaints, comorbidities which include anemia, hypothyroidism, systemic hypertension, coronary artery disease, diabetes mellitus, and their endometrial thickness in the ultrasound were retrieved from the medical records department. The histopathology reports of endometrial curettings were retrieved from the records of the department of pathology. Since the data is being collected retrospectively from the hospital records, there is no conflict of interest. The endometrial curettings were stored in 10% formalin and sent to the pathology department, processed and histopathological slides were prepared.[4] The results were expressed in frequency and percentage. All the data were analyzed using the SPSS software version 28. Statistical analysis of the data was done using the Chi-square test.

RESULTS

The total number of curetting samples studied was 105. The patient's age varied between 20 to 49 years. They were divided into 4 categories. The maximum frequency of age group with abnormal uterine bleeding was among women who were more than 40 years (64.8%) and the minimum was less than 35 years of age (15%). The following table shows the age distribution among the study population (Table 1).

Table 1: Age distribution of the study population.

Age (years)		N	%
Valid	≤35	15	14.3
	36-40	22	21.0
	>40	68	64.8
	Total	105	100.0

With respect to parity, the incidence of abnormal uterine bleeding was maximum among parity 2, which was around 41.9% (Figure 1). Around 32 women (30.5%) of the women belonged to the lower middle class.

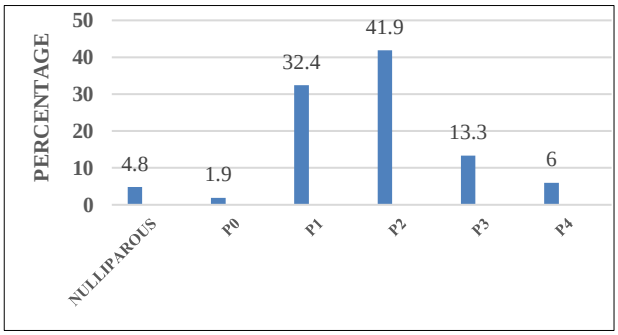

Figure 1: Parity of the study population.

Regarding the comorbidities, around 10.5% of the patients had type 2 diabetes mellitus and 8.6% of them had systemic hypertension (Figure 2).

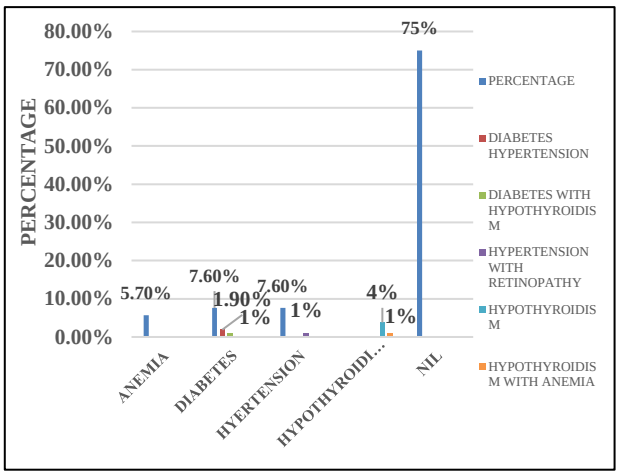

Figure 2: Comorbidities among patients.

With regards to symptomatology, around 91 women (86.7%) of the population presented with heavy menstrual bleeding, and about 27 women (25.7%) presented with frequent cycles. Histopathological examination of the endometrial curetting of the study population showed various patterns (Table 2).

Table 2: Endometrial changes in the study population (n=105).

Endometrial changes	%	N
Irregular shedding	18.1	19
Irregular ripening	1.9	2
Anovulatory shedding	34.3	36
Disordered proliferation	15.2	16
Endocervicitis	13.3	14
Papillary endocervicitis	8.6	9
Adenomyosis	3.8	4
Pill endometrium	3.8	4
Atrophic endometrium	2.9	3
CIN	1	1

But still, physiological patterns like anovulatory shedding (34.3%) and irregular shedding (18.1%) were the most common.[5] The incidence of secretory endometrium was 7.6% whereas proliferative endometrium was 3.8% in our study, which was low when compared to anovulatory shedding and irregular shedding. The next more common pattern observed was the disordered proliferative pattern among 16 women (15.2%) (n=105) and endocervicitis among 14 women (13.3%) (n=105) (Figure 3). Endometrial hyperplasia is a pathological condition that varies by the number of abnormal cells and the presence of cell changes. In our study, the incidence of endometrial hyperplasia with atypia was 8.6% (9 women) and without atypia was 91.4% (91 women) (Figure 4). Squamous metaplasia is one of the most common metaplastic changes which clinicians are concerned

about. It is considered a precursor of carcinoma. In our study, 10 women had histological patterns showing squamous metaplasia out of which one woman (10%) had additional changes like squamous metaplasia with endocervicitis, one (10%) had additional feature of endometrial hyperplasia with atypia and one (10%) had squamous metaplasia with adenocarcinoma (Figure 5).

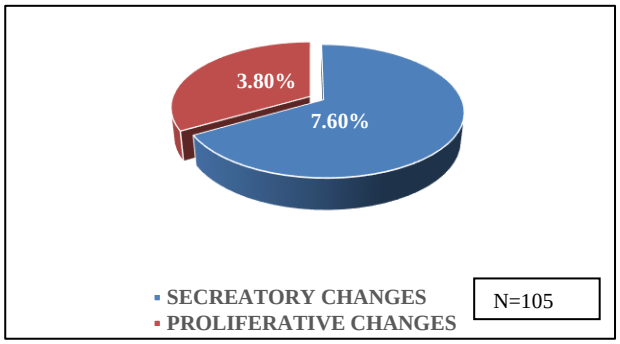

Figure 3: Incidence of physiological endometrial changes.

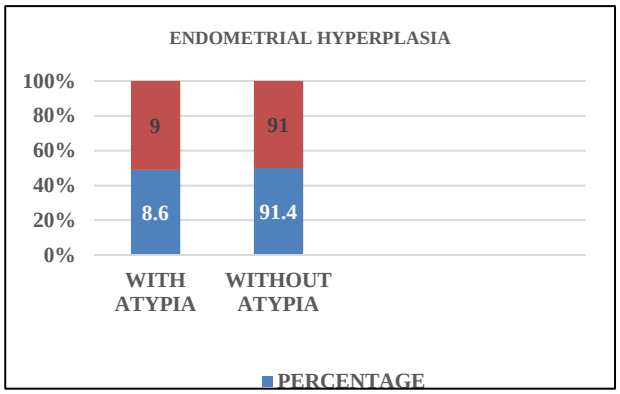

Figure 4: Distribution of endometrial hyperplasia.

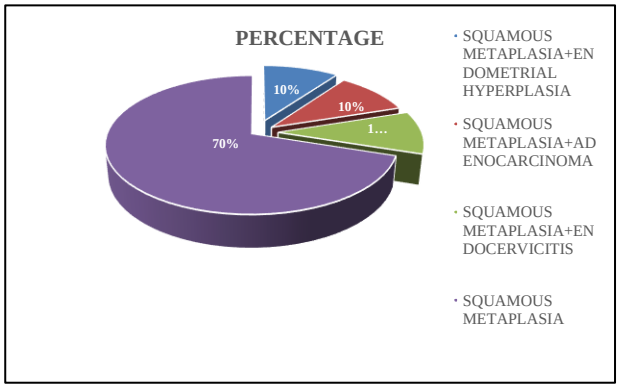

Figure 5: Squamous metaplasia in the study population.

Regarding the malignant changes in the endometrium, 3 patients that is 2.9% of the population had Adenocarcinoma and 4 patients i.e., 3.8% of the population had Endometrioid carcinoma. Endometrioid carcinoma was most common among women who were between 36 to 40 years of age (Table 3). The incidence of malignant changes was maximum among women who were more than 40 years of age in our study population (Table 4).

Table 3: Malignant changes in endometrium (n=105).

Pattern	N	%	Cumulative percent
Adenocarcinoma	3	2.9	2.9
Endometrioid carcinoma	4	3.8	3.8

Table 4: Age vs. malignant changes.

Age (years)		Malignant changes		Total
		Yes	No	
≤35	N	0	15	15
	%	0	100	100
36-40	N	0	22	22
	%	0	100	100
>40	N	5	63	68
	%	7.4	92.6	100
Total	N	5	100	105
	%	4.8	95.2	100

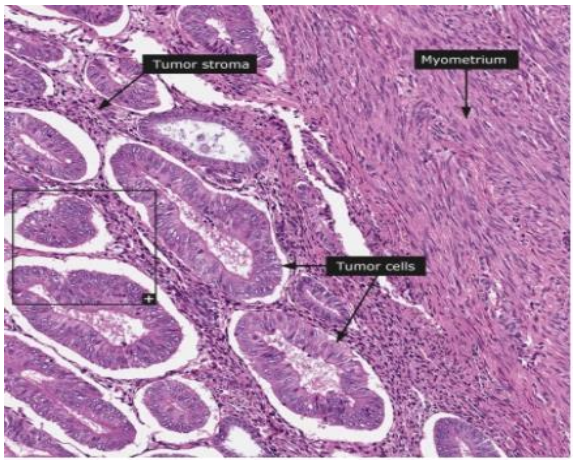

Figure 6: Histopathology of endometrioid adenocarcinoma.

DISCUSSION

While discussing AUB, we have to cover two definitions, heavy menstrual bleeding, and intermenstrual bleeding according to FIGO classification. We can assess the patients who present with these complaints by taking proper history, clinical features, bleeding patterns, etc. The endometrial tissue obtained by fractional curettage is a cheap, accurate, office-based diagnostic tool for evaluating AUB. In our study, AUB was most common among the perimenopausal age group that is more than 40 years (64.8%) which was similar to Kumari et al and the predominant pattern was anovulatory shedding (34.3%) in our study. In our study, the endometrial sample of

patients showing normal physiological changes like secretory pattern (7.60%), and proliferative changes (3.8%) was only a small proportion which was in contrast to the study by Kumari et al. In our study, disordered proliferative endometrium was seen among 16 women (15.2%). Disordered proliferative endometrium is a hyperplastic state of endometrium without an increase in endometrial volume without a change in gland: stroma ratio. Irregular shedding of the endometrium consists of all the endometrial changes that take place at the end of an anovulatory cycle. The endometrium undergoes degenerative, involutory, and regenerative changes more slowly than normal, which presents as prolonged and excessive menstrual bleeding. In our study, the total number of patients with shedding endometrium was 19 (18.1%). This was similar to the findings of Baral and Pudasaini. Endometrial hyperplasia is a pioneer of malignancy. It is commonly seen among perimenopausal women who present with irregular or prolonged bleeding. In our study, the endometrial pattern of around 91.4% of the patients showed endometrial hyperplasia without atypia and 8.6% showed endometrial hyperplasia with atypia. This was similar to Kumari et al (Figure 6).

In our study, the endometrial pattern of 3 patients (2.9%) showed adenocarcinoma and 4 patients (3.8%) showed endometrioid carcinoma. This was slightly higher than the findings in the study of Kumari et al. Most common variant was endometrioid carcinoma which was seen in women over 40 years of age. About 90% of the patients diagnosed as a case of endometrioid carcinoma, present with postmenopausal bleeding or white discharge per vaginum, and only less than 5% of the patients diagnosed with endometrioid carcinoma remain asymptomatic.[6] The suspicion of endometrioid cancer arises when a premenopausal woman has persistent abnormal uterine bleeding, chronic anovulation, and obesity. Management of AUB includes medical methods, conservative surgical techniques and definitive surgeries including hysterectomy. The ultimate aim is to reduce blood loss, reduce the risk of anemia, and improve quality of life. Over 60% of patients with AUB end up having a hysterectomy within 5 years from diagnosis out of which one-third are avoidable.[7] With newer modalities available, hysterectomy should be the last option. In women who are non-compliant with any other form of treatment, who have very severe symptoms and have completed family, hysterectomy is the treatment of choice.[8] Histopathological examination of the endometrium always shows a clear-cut distinction between physiological changes of endometrium, malignancy, and premalignant states of the endometrium.[9] Hence, endometrial sampling is considered the golden tool for accurate analysis of the endometrium.[10]

Limitations

This study does not involve the evaluation of endometrium in postmenopausal women, which is the first limitation of the study. The endometrial pattern in patients with coagulation disorder is not studied, which is also a limitation of this study. Also, the women who belong to the reproductive age group with IUCD *in situ* were not included in the study which is a small hitch in this study.

CONCLUSION

Abnormal uterine bleeding is a common problem in women of reproductive age and has a significant impact on quality of life. Though medical management is considered to be the first line of management of AUB, endometrial sampling is the diagnostic, easy, frequent and practical and gold standard method of diagnosis. AUB may also lead to loss of working hours and most of the treatment modalities cause considerable cost to the healthcare system throughout the world. Hence, proper history taking, counselling and holistic care is always required.

ACKNOWLEDGMENTS

Authors would like to thank Professor Dr. Anuradha, and Dr. Saloni from the department of obstetrics and gynecology in data collection for their help and support during the study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Priya M, Anuradha CR, Raghavan V. A retrospective study on endometrial patterns in abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol 2022;11:2194-8.