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Original Research Article

Role of Ultrasonography and Endometrial Sampling in Perimenopausal Abnormal Uterine Bleeding

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Abstract

Background: Abnormal uterine bleeding (AUB) is a frequently encountered gynecologic complaint in perimenopausal woman. AUB is defined as any deviation from the normal menstrual pattern. These include change in regularity, frequency of menses, duration or amount of bleeding during or in between periods. However endometrial hyperplasia and carcinoma are commoner in perimenopausal and postmenopausal women warranting investigations like ultrasonography and endometrial biopsy.
Aims and Objective: To correlate histopathological findings in patients with AUB with transvaginal scan report in perimenopausal women.
Method: In present study, total 41 women of age 40 years or above, not pregnant, presenting with abnormal bleeding per vaginum were evaluated. All patients underwent transvaginal scan to note down the endometrial thickness and to rule out uterine and adnexal pathology. Endometrial biopsy was done using a curette and tissue obtained was sent for histopathological examination. Findings of these diagnostic modalities were then correlated.
Results: Majority of cases (92.6%) were below 50 years, and multiparous. Obesity was the commonest (41.4 %) co-morbidity followed by hypertension (24.3%) and hypothyroidism (19.51%). USG was normal in most (41.4%) of the cases while structural abnormalities (polyp or leiomyoma) was the most common USG findings (34.13%) followed by hyperplasia (19.49%). Endometrial thickness (ET) was >8 in majority (68.52%) of cases. Proliferative endometrium was the most common histopathological finding (36.58%), only 1 case of malignancy was found.
Conclusion: Ultrasonography is useful for triaging abnormal uterine bleeding, but keeping risk factors in the mind, endometrial histopathology still has important role in the management of perimenopausal AUB.
Keywords: Perimenopausal, Endometrium, Hyperplasia, Carcinoma, Ultrasonography, Histopathology, Hysteroscopy, Biopsy.

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1. Introduction

Abnormal uterine bleeding generally describes all abnormal patterns of bleeding that may result from causes, including anovulation, pregnancy, uterine pathology and coagulopathies [1]. A common problem encountered by women of all age groups, responsible for around 20-30% visits to OPDs in reproductive age group and 69% in peri or postmenopausal age group [2]. It occurs in various forms such as menorrhagia, polymenorrhea, polymenorrhagia, metrorrhagia, and menometrorrhagia [3].

An international expert consensus from the FIGO Menstrual Disorders working group has proposed a standardized classification system for AUB to facilitate greater appreciation of the complexities of this clinical entity [4]. This classification allows the characterization of more than one etiology in the same patient. There are 9

main categories within the classification system named for the acronym PALM-COEIN. The PALM side of the classification refers to structural causes that could be evaluated and diagnosed on imaging and or biopsy. The COEIN side allows consideration of underlying medical disturbances that could result in AUB.

Palm-Coein Classification of AUB[5]	
Structural	**Non Structural**
Polyps	Coagulopathy
Adenomyosis	Ovulatory dysfunction
Leiomyomas	Endometrial (Primary disorders of mechanisms regulating local endometrial haemostasis)
Malignancy	Iatrogenic
Hyperplasia	Not yet specified

Moreover, AUB may be an expression of hormonal milieu, or it could be the clinical presentation of benign or malignant lesions of female genital tract in perimenopausal woman. However, there are no detectable structural abnormalities in majority of cases, and this is called dysfunctional uterine bleeding (DUB). DUB, fibroid uterus, and adenomyosis are the common hyperoestrogenic conditions where endometrium remains in the proliferative phase and if untreated may lead to endometrial carcinoma. Therefore, clinical examination and investigations are essential to find out the etiological factor in a perimenopausal patient presenting with AUB [6]. In perimenopausal women, AUB is diagnosed when there is a substantial change in frequency, duration, or amount of bleeding during or between periods.

Various diagnostic procedures including ultrasonography, diagnostic hysteroscopy, sonohysterogram, and dilation and curettage (D&C) are available for anatomic changes and for endometrial carcinoma [7]. But dilatation and curettage (D&C) is the mainstay of endometrial sampling since long [8]. D and C will only scrape less than 50% of the endometrial cavity in 60% of the patients, so becomes less accurate than hysteroscopy in diagnosing structural pathology such as polyps, fibroids, intrauterine adhesions and congenital malformations [9]. It has a cancer detection failure rate of 0.9% [10]. With limited resources, in developing countries like India, it is the most commonly used method of assessing AUB [11]. Transvaginal scan is also less accurate than hysteroscopy in diagnosing exact pathology, but it can give fair idea about structural abnormalities intrauterine pathology [12].

Hence, the current study was carried out to correlate the histopathological findings in patients with AUB with transvaginal scan report in perimenopausal women.

2. Materials and Methods

This retrospective observational study was conducted in the Department of Obstetrics and Gynaecology, in collaboration with Pathology department, at H B T Medical College & DR. R.N Cooper Municipal General Hospital during the period of 6 months. The study population consists of perimenopausal women of age 40 years or above, not pregnant and presenting with abnormal bleeding per vaginum. During the study period total 84 women underwent dilatation and curettage, of these, 41 patients fulfil the inclusion criteria of the study (n=41).

The relevant data such as age, parity, menstrual symptoms, and other associated symptoms were recorded. A detailed history was taken, and a thorough clinical examination was done. All patients underwent transvaginal scan to note down the endometrial thickness and to rule out uterine and adnexal pathology. Endometrial biopsy was done using a curette and tissue obtained was sent for Histopathological examination. Histopathology findings of atrophic, hyperplasia, secretory, proliferative and malignancy of the endometrium were noted and correlated with sonographic reports.

3. Observations and Results

Total 41 perimenopausal women were enrolled in the study. The maximum incidence of AUB was present between the age group of 41-45 years (73.17%) followed by 46-50 years (19.51%), (Table 1).

Table 1: Age distribution of patients

Age groups (Years)	Number	Percentage
41-45	30	73.17
46-50	8	19.51
51-55	2	4.87
56-60	0	-
>60	1	2.43

Though nulliparity is associated with carcinoma of endometrium, majority (85.35 %) of cases in the study were para 2 or more, (Table 2).

Table 2: Parity

Parity	Number	Percentage
P1	06	14.63
P2	18	43.90
P3	09	21.95
P4	05	12.19
P5 and more	03	7.31

Most of the cases (43.9%) had no co-morbidities. Obesity was the commonest (41.4 %) co-morbidity found, followed by hypertension (24.3%) and then hypothyroidism (19.51%), (Table 3).

Table 3: Distribution among the cases of- comorbidities

Medical Illness	Number	Percentage
Diabetes Mellitus	05	12.19
Hypertension	10	24.39
Hypothyroidism	08	19.51
Obesity	17	41.46
None	18	43.90

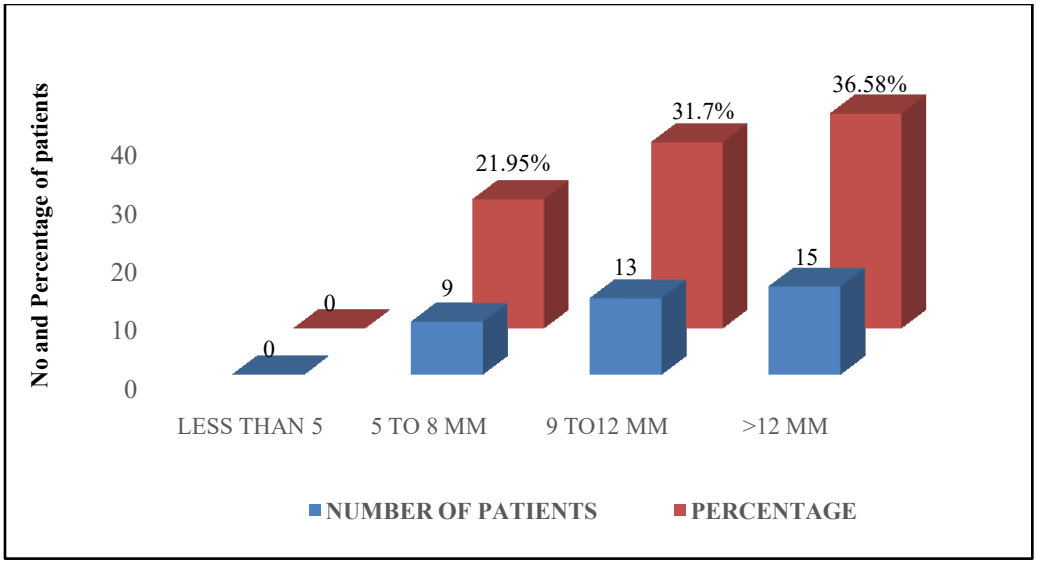
Ultrasonography was normal in most (41.4%) of the cases and there were structural abnormalities (polyp or leiomyoma) in 34.13% of cases. Hyperplasia was found in 19.49% cases (Table 4).

Table 4: Distribution among the cases of-pathology in ultrasonography

Findings	Number	Percentage
Normal	17	41.46
Homogenous Hyperplasia	02	4.87
Heterogenous Hyperplasia	04	9.75
Polyp	02	4.87
Leiomyoma	12	29.26
Cystic Hyperplasia	02	4.87
Endometriosis	01	2.43
Pyometra	01	2.43

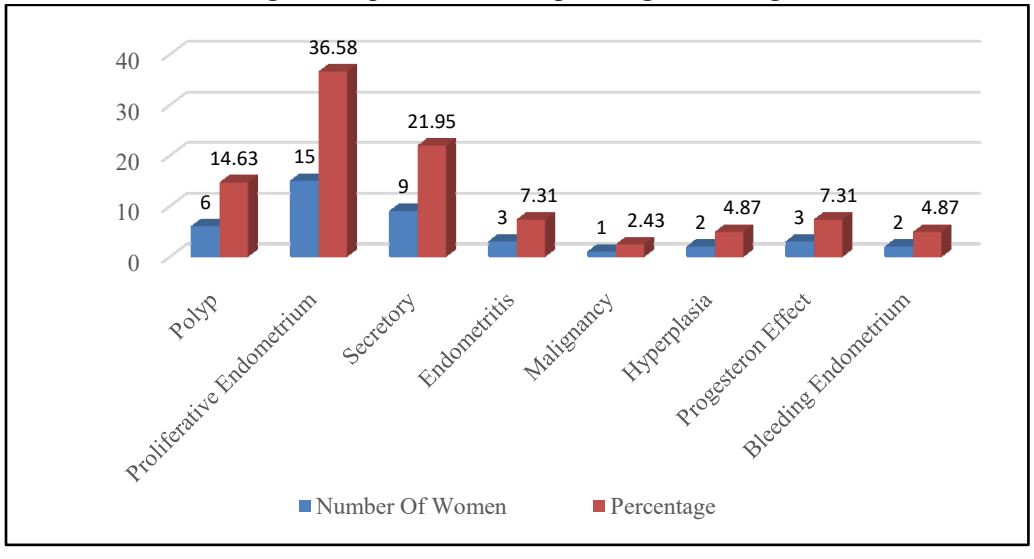
None of the patients with endometrial thickness (ET) less than 5mm were subjected to D and C. 15 patients (36.58%) have thickness >12 mm followed by 13 patients (31.7%) have thickness between 9-12 mm. Thus, the ET was > 8 in majority (68.52%) of the cases, (Figure 1).

Figure 1: Correlation with endometrial thickness



Among 41 patients in the study 15 (36.58%) patients had proliferative endometrium followed by secretory in 9 patients (21.95%) and only 1 case of malignancy was found, (Figure 2).

Figure 2: Spectrum of histopathological findings



4. Discussion

Perimenopausal bleeding is a common disorder and for many years diagnostic curettage is required to exclude endometrial abnormalities. Although the incidence of carcinoma increases with age, other causes of AUB like anovulatory bleeding and atrophic endomentrium are much more common. In cases of perimenopausal and postmenopausal bleeding, for many years the widely used techniques for obtaining endometrial sample was dilatation and curettage. However this procedure has many limitations, the false negative rate of 2%-6% has been reported in diagnosing endometrial carcinoma and

hyperplasia with dilation and curettage [4]. Only 10% of women undergoing dilation and curettage are found to have endometrial pathology as with other procedures of getting endometrial sampling by vabra aspirator or pipelle. The main reason being the sampling error associated with these procedures and a single curettage will not remove all the surface of the endometrium completely from uterine cavity. To overcome these limitations a noninvasive, diagnostic modality with no risk of complications has been sought. Diagnostic vaginosonography is a good method for the evaluation of endometrial growth in peri and post menopausal women. Despite the phasic variation in endometrial thickness, the endometrium can be easily visualized by ultrasonography and measurements of its thickness can be used as a screening method to avoid unnecessary curettage in these women [13].

In present study 41 perimenopausal patients of AUB having age of 40 years or above were evaluated. Authors found that the maximum incidence of AUB was present between the age groups of 41-45 years (73.17%) which is similar to the study done by Talukdar *et al* [6] in which they reported most number of patients (69.67%) between 40-45 years of age group. In a study conducted by Patil *et al* [14] a total of 100 patients of age more than 18 years with AUB were evaluated and found that Abnormal uterine bleeding was most prevalent among women of two age groups, 26-30 years and 41-45 years (22%). In another study conducted by Kathuria *et al* [15] evaluating 50 patients between age group of 20-60 years and found to maximum incidence between the age group of 30-39 years (44%). Present study showed a different prevalence profile than the above studies as we have considered patients 40 or above years of age as study population. Out of 41 patients, most of them presented with isolated complaints of menstrual abnormality with obesity (41.46%) while the remaining patients had some or the other associated morbid conditions. Among these hypertensions was seen in 24.39% patients, hypothyroidism in 19.51% and diabetics in 12.19% patients. These results were correlated with the previous studies done by Patil *et al* [14] and Bhatiyani *et al* [16].

Ultrasonography being easily available and more feasible as compared to hysteroscopy was done in current study. Ultrasonography showed various abnormalities in 58.6% of the patients while in 41.4% patients it was normal. Among the detected abnormalities, structural abnormalities (polyp or leiomyoma) was the most common (34.13%) followed by hyperplasia in 19.49%. This finding of USG is in concordance with the study done by Maheux-Lacroix *et al* [17].

The current study suggests endometrial thickness of 8 mm or less in perimenopausal women with vaginosonogrphy do not require dilatation and curettage as no abnormal endometrium noted in this group. A measured thickness of at least 8 mm should be considered as an indication for diagnostic curettage. The difference of 1 mm is taken as the Inter observer variation. In this study only 8 cases showed endometrial hyperplasia with endometrial thickness less than 8 mm. Endometrial thickness (ET) was more than 8 in majority (68.52%) of the cases which is similar to the study done by Shobhitha *et al* [13] in which they reported 45.5 % endometrial thickness between 8-15 mm. Based on ET or clinical risk, patients were subjected to dilatation and curettage.

Proliferative endometrium was the most common histopathological finding (36.58%) which indicates an ovulatory AUB which occurs in perimenopausal women who is in the follicular phase of an ovarian cycle and proliferative phase of an endometrial cycle. In the study done by Damle *et al* [18] the predominant histopathological findings was proliferative endometrium (34.09%) in perimenopausal women. In another study conducted by Shrestha *et al* [19] found proliferative endometrium was the most common finding (30.4%). In current study, out of 6 cases of endometrial polyps diagnosed on histopathology, only 1 could be picked up correctly on USG. USG is helpful in triaging cases which do not need D and C. A case with carcinoma endometrium and four cases of heterogenous hyperplasia showed mass on USG. Endometrial histopathology did not correlate with respect to USG in cases of hyperplasia.

5. Conclusion

Transvaginal ultrasonography is safe, acceptable and easily available in most secondary and tertiary care setting and is noninvasive. It should be continued as 1st line diagnostic tool in patients with AUB in perimenopausal women. Also it is useful for triaging abnormal uterine bleeding, but keeping risk factors in the mind (age and comorbidities), endometrial histopathology still has important role. Endometrial sampling is useful in the management of perimenopausal AUB.

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