10.5005/jp-journals-10016-1164

ORIGINAL ARTICLE

Abnormal Uterine Bleeding in Perimenopausal Women: Relevance of Transvaginal Ultrasound, Office Endometrial Biopsy, Dilatation and Curettage—An Observational Study

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ABSTRACT

Introduction: Abnormal uterine bleeding (AUB) in perimenopausal women requires careful evaluation due to the risk of endometrial malignancy. Symptomatic women with thick endometrium by transvaginal ultrasound (TVS) warrant endometrial sampling. D&C has been the mainstay over decades whereas pipelle has gained popularity due to good tissue yield and easy technique with no admission or anesthesia. This study aims to determine the use of office endometrial biopsy in perimenopausal women with AUB and the endometrial pathology detected by TVS.

Materials and methods: In this observational study over five years, 159 women with AUB who underwent endometrial sampling were included. The patients were randomly assigned D&C or pipelle depending on symptoms and endometrial thickness after clinical examination and laboratory investigations. 79.2% of women underwent office endometrial sampling, and 20.8% underwent D&C. samples were sent for histopathology. Statistical analysis was done with respect to the type of sampling and endometrial thickness by TVS.

Results: Mean age of the study group was 44 years. About 60.3% of these women had ET of 10–20 mm. It was noted that women with thinner endometrium had more benign lesions and no atypia or malignancy. Sampling was 100% adequate in D&C cases compared to 97.8% of office biopsy group, though statistically not significant. Office endometrial biopsy and D&C yielded adequate sample and a reliable histopathological report and were comparable with respect to sampling, reports and endometrial thickness. Endometrial malignancy was diagnosed in 1.3% of the study group. 56.6% of women had simple hyperplasia without atypia, and 27% had a normal endometrium.

Conclusion: Office endometrial biopsy is a sensitive method to detect abnormal endometrium in women with AUB. Diagnostic Office endometrial sampling is comparable to D&C with lesser complications. TVS prior to endometrial sampling improves the sensitivity to diagnose endometrial pathology.

Keywords: Abnormal uterine bleeding, Office endometrial biopsy, Transvaginal ultrasound, D&C

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How to cite this article: Pai AH, Kodandapani S. Abnormal Uterine Bleeding in Perimenopausal Women: Relevance of Transvaginal Ultrasound, Office Endometrial Biopsy, Dilatation and Curettage—An Observational Study. Int J Infertil Fetal Med 2018;9(1&2):10-13.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Abnormal uterine bleeding (AUB) is the most common symptom in gynecology outpatient clinics. In perimenopausal women, it accounts for 70% consultations.[1] Gyn cologic clinical examination, transvaginal ultrasound (TVS) and endometrial sampling are the primary tools in the management of AUB. In perimenopausal women with abnormal uterine bleeding and a thick abnormal endometrium on TVS, endometrial sampling is indicated to rule out malignancy and to prevent a hysterectomy. Dilatation and curettage (D&C) has been the mainstay in endometrial sampling over decades. D&C samples less than 60% endometrium and has risks of anesthesia, infection and perforation.[2,3] Recently, pipelle or office endometrial biopsy has gained popularity due to good endometrial tissue yield, easier technique and it forgoes admission or anaesthesia.[4,5] This study aims to determine the use of office endometrial biopsy in perimenopausal women with AUB and the endometrial pathology detected by TVS.

MATERIALS AND METHODS

This study was conducted at Subbaiah Medical College and Hospital, Shivamogga, Karnataka from 2013 to December 2017. A total of 159 perimenopausal women who attended the gynecologic outpatient clinic with a history of abnormal vaginal bleeding and underwent endometrial sampling were included in the study. All women underwent complete clinical gynecologic examination, transvaginal pelvic ultrasound and labo ratory blood investigations to rule out other causes of AUB. These women were then randomly assigned office endometrial sampling (Pipelle/Endocel) or dilatation and curettage depending on symptoms and endometrial thickness by TVS and other comorbidities. Authors pre-

ferred pipelle as it was effective and user-friendly. Endometrial tissue obtained was then sent for histopathology. Statistical analysis of the study was done with SPSS version 16 with respect to the histopathologic analysis of endometrial tissue obtained by office sampling and by D&C.

RESULTS

A total of 159 perimenopausal women were included in the study. Mean age of the study group was 44 years. All these women presented in the outpatient department with a history of abnormal uterine bleeding and underwent complete gynecologic clinical examination, transvaginal ultrasound and laboratory investigations to rule out other causes of AUB. After that, 79.2% of women underwent office endometrial sampling and 20.8% women had D&C. None of the patients had coagulation abnormality or had a suspicion of malignancy at TVS.

About 60.3% of women had an endometrium between 10 mm and 20 mm, 25.7% of women had endometrium of less than 10 mm, whereas 13.8% had an endometrial thickness more than 20 mm. Type of sampling was randomly assigned depending on symptoms and endometrial thickness. Women who came with excessive bleeding underwent D&C irrespective of endometrial thickness (Table 1). Comparing the use of D&C or office biopsy with respect to an endometrial thickness on TVS showed *p* value ($p = 0.154$) not significant by Pearson Chi-square test.

With respect to histopathological reports, 56.6% of women had simple hyperplasia without atypia, 27% of women had normal endometrium (proliferative/secretory). Office biopsy group showed more women with benign conditions and milder hyperplasia, maybe because office sampling was opted depending on symptoms and ET on TVS. Malignancy was diagnosed in 1.3% of the patients. Both these women belonged to the D&C group. One patient was having moderately differentiated adenocarcinoma, and the other was diagnosed to haveaplastic carcinoma. In the D&C group, sampling was adequate in all cases compared to 97.8% in the office biopsy group. This was, however, statistically not significant. On comparing D&C and office biopsy, there was no statistical significance ($p = 0.073$) when compared with histopathological reports (Table 2).

While comparing endometrial thickness (ET) by TVS with histopathological reports, women with AUB were divided into three groups, ET<10 mm, ET 11–20 mm and ET >20 mm. It was found that in all groups, the incidence of simple hyperplasia without atypia was the maximum, 50% in ET< 10 mm group, 58% in ET 11–20 mm group and 54% in ET >20 mm. Hence, most perimenopausal women with AUB have a normal or milder endometrial hyperplasia which can be managed medically. Out of two women diagnosed to have malignancy, one had ET 11–20 mm and the other ET >20 mm. It was noted that in the ET <10 mm, there were no (zero) women who had simple hyperplasia with atypia, complex hyperplasia with or without atypia and malignancy (Table 3). Hence it can be fairly assumed that a thinner endometrium indicates a benign pathology.

Table 1: Endometrial thickness by TVS and type of sampling

Type of sampling	*Endometrial thickness (TVS)*			
	<10 mm	*10-20 mm*	*>20 mm*	*Total*
D&C	6	19	8	33
Office biopsy	35	77	14	126
	41	96	22	159

Table 2: Comparison of type of sampling to histopathological reports

	D&C	*Office biopsy*	*Total (N = 159)*
Proliferative endometrium	6	19	25
Secretory endometrium	0	19	19
Simple hyperplasia without atypia	20	70	90
Simple hyperplasia with atypia	1	4	5
Complex hyperplasia without atypia	2	5	7
Complex hyperplasia with atypia	2	2	4
Endometrial polyp	0	2	2
Malignancy	2	0	2
No endometrial tissue	0	3	3
Endometritis	0	1	1
Atrophic endometrium	0	1	1
Total	33	126	159

DISCUSSION

Abnormal uterine bleeding is a major concern in a perimenopausal woman due to the risk of endometrial malignanc. Transvaginal ultrasound and endometrial sampling are hence basic investigations in the management of these women.

D&C has been a time-tested method for endometrial sampling in terms of adequacy of sample and correlation with histopathological diagnosis.[3,4] However, it requires inpatient admission, cervical dilatation, and anesthesia. Also, of concern is the risk of perforation and infection.

Outpatient edometrial sampling by Pipelle was introduced in the 1980s. It has become popular as it is an easy procedure, convenient, better tolerated and does not require hospital admission or anesthesia.

A meta-analysis by Dykhuizen et al.[6] to assess the accuracy of endometrial sampling devices for detecting endometrial carcinoma and atypical hyperplasia found pipelle to be superior (99% detection in postmenopausal women and 91% detection in premenopausal women) to other techniques in perimenopausal women. This is in correlation with the findings of Clark et al.,[7] Sarwar et al.[8]

Table 3: Endometrial thickness on transvaginal ultrasound and histopathological diagnosis

	Transvaginal ultrasound			
Histopathology reports	*ET< 10 mm*	*ET11–20 mm*	*ET >20 mm*	*Total*
Proliferative endometrium	7	15	3	25
Secretory endometrium	9	9	1	19
Simple hyperplasia without atypia	22	43	12	90
Simple hyperplasia with atypia	0	4	1	5
Complex hyperplasia without atypia	0	5	2	7
Complex hyperplasia with atypia	0	2	2	4
Endometrial polyp	0	2	0	2
Malignancy	0	1	1	2
No endometrial tissue	1	2	0	3
Endometritis	1	0	0	1
Atrophic endometrium	1	0	0	1
Total	41	96	22	159

It was also noted that focal lesions such as polyps and endometritis were likely to be missed.[6] Abdalezim et al.[9] concluded that pipelle device had a high negative predictive value and a high accuracy in spite of low sensitivity for endometritis and polyps. Kuruvilla et al.[10] found that inadequate endometrial sample was most often a missed endometrial polyp. A negative biopsy in a symptomatic patient needs to be followed by a fractional curettage or hysteroscopy.[11] Pipelle is comparable to D&C in terms of adequacy of the sample and in diagnosing endometrial pathology. Being an office procedure, it allows for early diagnosis of endometrial carcinoma and reassurance for women with benign lesions. It reduces the number of D&C performed in the operation theatre.

Postprocedure complications are minimal 0.1–0.2% compared to 0.3–2.6% in D&C.[12] Pipelle has a very low risk for uterine perforation versus other sampling devices, though one case has been reported.[13] Pipelle produced significantly lesser pain than D&C.[14]

There is no therapeutic benefit with pipelle as compared to D&C. Hence, it can be used only for the diagnostic purpose, where it yields adequate sample with reliable histopathology reports.[4-12]

Prophylactic antibiotics may not be necessary during office endometrial sampling.[12] However, the procedure is contraindicated in women with suspected pregnancy and the presence of acute vaginal or cervical infection, pelvic inflammatory disease, and clotting disorders.

In our study, we obtained an adequate endometrial sample in 97.8% of women in the office biopsy group and 100% in the D&C group. The three women with negative biopsy in the office biopsy group were in the thinner endometrium group. Only one patient was diagnosed to have endometritis, and one patient had atrophic endometrium in this group. It was also seen that adequate endometrial tissue was obtained irrespective to the endometrial thickness. It was noteworthy that most perimenopausal women with AUB had normal endometrium and simple hyperplasia without hyperplasia. These women were reassured, medical management was initiated, and a hysterectomy was avoided.

Endometrial sampling can miss focal lesions.[6,11] Addition of TVS to endometrial sampling increases the sensitivity and specificity in detecting endometrial pathology. Desilva et al.[15] noted that measurement of endometrial thickness had a sensitivity of 62% with a specificity of 87.8%. When combined with pipelle, sensitivity was increased to 87.5% with a specificity of 87.8%. A thick endometrium may not be an indicator in endometrial hyperplasia or atypia or malignancy or symptoms of AUB.[16] However, a thin endometrium in a woman with AUB indicates a benign condition and rules out atypia or malignancy.

In our study, it was noted that in the group with endometrium less that 10 mm, no cases were noted to have endometrial atypia or malignancy and primarily were benign conditions. Office endometrial biopsy and D&C yielded an adequate sample and a reliable histopathological report. Both procedures were comparable with respect to sampling, reports and endometrial thickness.

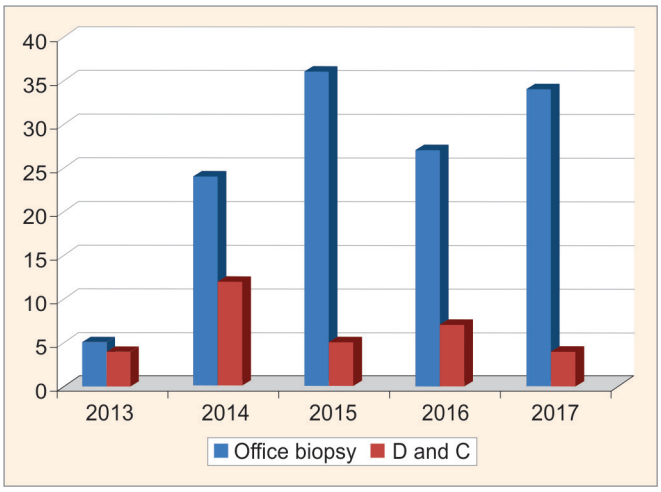
Neither office endometrial biopsy nor D&C are adequate methods for focal endometrial lesions. Negative biopsy in symptomatic patients may be an indication for further evaluation with hysteroscopy and guided biopsy.[15]

The one limitation of the study was that we could not compare endometrial sampling histopathology with hysterectomy histopathology reports. TVS reporting and histopathology reporting was multioperator. Though having more than 5-year experience, there may be fallacies. Here pathologists were comfortable with sampling from either method. Also, patients were subjected to only one sampling method and not both of them. This is, in contrast, to study done by Abdelazim et al.[9]

Despite these limitations, we have a good study sample size of 159 subjects andhistopathology was compared to the ET by TVS. As the sample adequacy, reporting, patient compliance and decision making with office endometrial biopsy were satisfactory over the years; we tended to do more office procedures than D&C (Graph 1). D&C was opted when the patient required diagnosis as well as therapy (hemostasis).

CONCLUSION

Office endometrial sampling is a reliable, accurate, easy, safer, cost-effective and sensitive method for detection of



Graph 1: Office endometrial sampling versus D&C over the years

abnormal endometrium in women with AUB, especially when the pathology is global. The success rate of diagnostic office endometrial sampling is almost equal to conventional D&C with lesser complications. TVS prior to endometrial sampling helps achieve higher sensitivity in diagnosing endometrial abnormality.

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