ORIGINAL ARTICLE

Comparative Study of Histopathology of Hysterectomy Specimen with Dilatation and Curettage and Hysteroscopic-guided Biopsy in Evaluating Perimenopausal and Postmenopausal Bleeding

BS Manikantan Somasundar[1], Lalitha Shanmugam[2]

Received on: 02 June 2022; *Accepted on*: 24 August 2022; *Published on*: 16 November 2022

Abstract

Aim: This study was done to compare the efficacy of plain cervical dilatation and curettage (D&C) and hysteroscopic-guided biopsy in evaluating endometrial pathology and to compare the histopathology findings of hysterectomy specimen.

Materials and methods: This study was done at the Obstetrics and Gynecology outpatient department (OPD) in Dr Chandramma Dayanand Sagar Institute of Medical Education and Research, Harohalli, Ramanagara, Karnataka, India over a period of 1 year from January 2021 to January 2022. A total of 100 perimenopausal and postmenopausal women complaining of abnormal uterine bleeding in gynecology OPD were included. Those women who are eligible for diagnostic D&C, cervical dilatation and endometrial curettage were done under i.v. sedation in the operation theater (OT) and the curetting was sent for histopathological examination (HPE). Those women who needs hysteroscopy, it was done under short general anesthesia and the sample was sent for histopathologic examination. Patients for whom hysterectomy was indicated following D&C or hysteroscopy would be followed for the histopathological findings.

Results: Our cases range in the age-group of 40–55 years who presented with abnormal uterine bleeding (AUB) without local gynecological cause and with failure of medical treatment for at least 3 months. The mean duration between the endometrial curettage and the hysterectomy being 2.5 weeks. The highest correlation was seen in the endometrial phase, followed by complex and then by simple hyperplasia.

Clinical significance: The main reason for choosing this study is to find the diagnostic modality with higher accuracy so as to avoid unnecessary hysterectomy in patients with AUB.

Keywords: Endometrial phase, Hysterectomy, Hysteroscopic-guided biopsy.

Journal of South Asian Federation of Obstetrics and Gynaecology (2022): 10.5005/jp-journals-10006-2119

Introduction

Endometrial hyperplasia is a spectrum of morphologic and biologic variation in the uterine endometrial glands and stroma extending from a hyperestrogenic state, which is an exaggerated physiologic condition, to carcinoma *in situ*.

Abnormal uterine bleeding means any variation from the normal menstrual cycle either increase in volume, duration or amount of bleeding or variation with respect to regularity, or bleeding in between the normal menstrual cycle for a period of 6 months.[1] About 30–40% of all gynecological consultation in hospitals took place for these variations in the menstrual cycle[2,3] and 30% of women suffers from this problem during their reproductive life. Perimenopausal and postmenopausal women are affected the most. Quality of life also affected adversely by AUB.[4]

The various forms of abnormal uterine bleeding includes menorrhagia, metrorrhagia, polymenorrhea and menometrohagia. Diagnostic modalities for evaluating the cause of abnormal uterine bleeding are many. These include ultrasonography; D&C; and Hysteroscopic-guided endometrial biopsy. Recently, the efficacy of D&C has been questioned. In a study by Hemida et al.,[5] no significant differences have been noted in the histology between the endometrial tissues obtained by diagnostic D&C and hysterectomy. On the other hand, more severe histopathologies have been observed in hysterectomy samples than in diagnostic D&C endometrial curettage samples, or the consistency between the two procedures was low. Endometrial curettage was also unable to diagnose malignancies in postmenopausal women.[6] This study was mainly conducted to compare the diagnostic value of D&C and hysteroscopic-guided endometrial biopsy by comparing with the histopathological finding of endometrial tissue obtained by hysterectomy.

[1]Department of Radiology, Dr Chandramma Dayananda Sagar Institute of Medical Education and Research, Harohalli, Karnataka, India

[2]Department of Obstetrics and Gynaecology, Dr Chandramma Dayananda Sagar Institute of Medical Education and Research, Harohalli, Ramanagara, Karnataka, India

Corresponding Author: Lalitha Shanmugam, Department of Obstetrics and Gynaecology, Dr Chandramma Dayananda Sagar Institute of Medical Education and Research, Harohalli, Ramanagara, Karnataka, India, Phone: +91 8892633534, e-mail: lalithashanmugam0@gmail.com

How to cite this article: Somasundar BSM, Shanmugam L. Comparative Study of Histopathology of Hysterectomy Specimen with Dilatation and Curettage and Hysteroscopic-guided Biopsy in Evaluating Perimenopausal and Postmenopausal Bleeding. J South Asian Feder Obst Gynae 2022;14(5):527–530.

Source of support: Nil

Conflict of interest: None

Materilals and Methods

In our study, we collected data from 100 patients who presented with complaints of perimenopausal and postmenopausal bleeding in a tertiary care center in Bengaluru, Karnataka. This study was mainly conducted to compare the histopathological findings obtained by D&C and hysteroscopic-guided biopsy with the histopathology findings of hysterectomy specimen in those patients undergoing hysterectomy.

Inclusion Criteria

- Perimenopausal and postmenopausal women complaining of abnormal uterine bleeding without local gynecological cause.
- Failure of conservative medical management for at least 3 months.

Exclusion Criteria

- Age-group: Women less than 40 years and more than 55 years.
- Blood disorders or coagulopathy.
- Diagnosed or suspected local gynecological lesion (polyp, adenomyosis, myoma, malignancy, or cervical pathology).
- Use of intrauterine contraceptive device (IUCD).
- Pregnancy related conditions.

Perimenopausal and postmenopausal women complaining of AUB was selected after detailed history taking; general, abdominal, and vaginal examinations. Routine preoperative investigations and transvaginal ultrasonography was done. The patients who are eligible were admitted a day prior to the procedure. Those women who are eligible for diagnostic D&C, cervical dilatation and endometrial curettage was done under short general anesthesia in the OT and the curetting was sent for histopathologic examination.

Those women who needs hysteroscopy, in the morning, misoprostol 400 µg kept per vaginally for cervical ripening to facilitate introduction of hysteroscope. Dilatation of endocervical canal was done by Hegar's cervical dilator up to 6 mm was performed to facilitate hysteroscope entry. Using normal saline, the uterine cavity was distended with pressure of 120 mm Hg. Hysteroscopic findings were recorded which includes normal or hyperplastic endometrium and bilateral ostia of the fallopian tubes were visualized in panoramic view. All four walls of the uterine cavity were inspected. After removing the hysteroscope, endometrial curetting was collected and the sample sent for histopathologic diagnosis. Patients for whom hysterectomy is indicated following D&C or hysteroscopy would be followed for the histopathological findings. The histopathology of posthysterectomy specimens will be compared with the endometrial pathology obtained by D&C and hysteroscopy.

Results

Table 1 shows that out of 100 patients, majority of them were between the age of 41–45 years (53%). A total of 26% patients were in the age range 46–50 years and 21% patients belonged to the age-group of 51–55 years.

Table 2 shows that the endometrial thickness on transvaginal sonography (TVS) was found to be between 8–10 mm in majority of patients (72%), 5–7 mm in 20 patients (20%), and above 10 mm in 8 patients (8%).

Table 3 shows that the commonest presenting complaints was menorrhagia in 52 patients (52%), followed by 29 patients (29%) with postmenopausal bleeding. The less common presenting symptoms were irregular spotting in 9%, menometrorrhagia in 5%, and polymenorrhea in 5% patients.

Table 4 shows the histopathology findings following D&C. A total of 18 out of 50 patients who underwent D&C showed proliferative endometrium, out of which 3 patients showed disordered proliferative endometrium. Secretory endometrium was found in 12 out of 50 patients, endometrial polyp in 3 out of 50 patients, atrophic endometrium was noted in 7 out of 50 patients, and simple endometrial hyperplasia without atypia was noticed among 4 out of 50 patients. None of the patients had endometrial carcinoma.

Table 5 shows that out of 50 patients who underwent D&C, 29 patients proceeded with hysterectomy. After hysterectomy,

Table 1: Age-group of patients

Age-group (years)	*Number*	*%*
41–45	53	53
46–50	26	26
51–55	21	21

Table 2: Endometrial thickness

Endometrial thickness (mm)	*Number*	*%*
5–7	20	20
8–10	72	72
>10	8	8

Table 3: Various forms of AUB

Type of complaints	*Number*	*%*
Menorrhagia	52	52
Menometrorrhagia	5	5
Polymenorrhea	5	5
Irregular bleeding	9	9
Postmenopausal bleeding	29	29

Table 4: Histopathology findings of D&C

D&C histopathology findings	*Number*	*%*
Proliferative endometrium	15	30
Disordered proliferative endometrium	3	6
Secretory endometrium	12	24
Endometrial polyp	3	6
Atrophic endometrium	7	14
Endometrial hyperplasia	4	8
Endometrial carcinoma	0	–
Lyric endometrium	6	12

Table 5: Histopathology findings of hysterectomy

Hysterectomy HPE findings	*Number*	*%*
Proliferative endometrium	15	51.72
Secretory endometrium	6	20.68
Simple endometrial hyperplasia	5	17.24
Endometrial carcinoma	2	6.89
Cervical intraepithelial lesion	2	6.89

postoperative histopathologic diagnosis suggested the same number of patients with proliferative endometrium (15 out of 29), secretory endometrium was noticed in 6 patients out of 29. Simple endometrial hyperplasia noticed in 5 patients out of 29, whereas it was noted only in 4 patients after D&C. Two patients had endometrial carcinoma posthysterectomy, which was misdiagnosed as Benign endometrial polyp and as secretary phase endometrium after D&C. Cervical intraepithelial lesion noted in two patients after hysterectomy.

Table 6 shows the histopathology findings following hysteroscopic-guided biopsy. A total of 16 patients had proliferative endometrium among which 4 patients had disordered proliferative endometrium. Secretory endometrium noted in 13 patients out of 50 patients. A total of 4 patients showed the histopathologic features of endometrial polyp and atrophic endometrium noted in 8 out of 50 patients. Simple endometrial hyperplasia seen in 5 patients and 2 patients had non-atypical hyperplasia of endometrium. Endometrial carcinoma was found in 1 patient out of 50 patients and lyrics endometrium was seen in 1 out of 50 patients.

Out of 50 patients who underwent hysteroscopic-guided endometrial biopsy, 25 patients proceed with hysterectomy. Table 7 shows that postoperative histopathologic findings revealed that 12 out of 25 patients had proliferative phase endometrium, 7 patients had secretory phase endometrium, 5 patients had hyperplasia of endometrium, and 1 patient had endometrial carcinoma. Hysteroscopy can detect endometrial carcinoma with an accuracy of 100%.

We aimed in our study to evaluate the accuracy of D&C and hysteroscopic-guided endometrial biopsy by comparing the preoperative histopathology results with postoperative hysterectomy specimen examination. It was shown that preoperative findings were positively correlated with postoperative diagnosis but the consistency was more with hysteroscopy as compared to D&C. It was found that D&C may skip the real and worse pathology. So, patients with complex endometrial hyperplasia with or without atypia, a repeat D&C or hysteroscopic-guided endometrial biopsy may be recommended.

Table 6: Histopathology findings of hysteroscopy

Hysteroscopy HPE findings	*Number*	*%*
Proliferative endometrium	12	24
Disordered proliferative endometrium	4	8
Secretory endometrium	13	26
Endometrial polyp	4	8
Atrophic endometrium	8	16
Endometrial hyperplasia	7	14
Endometrial carcinoma	1	2
Lyric endometrium	1	2

Table 7: Histopathology findings of hysterectomy

Hysterectomy HPE findings	*Number*	*%*
Proliferative endometrium	12%	48
Secretory endometrium	7%	28
Endometrial hyperplasia	5%	20
Endometrial carcinoma	1%	4
Cervical intraepithelial lesion	–	–

Discussion

The most common reason where patients are being referred to the gynecology department is AUB. So, the diagnosis in patients with AUB should be done with greatest accuracy to avoid mismanagement. For decades, the universal procedure for diagnosing intrauterine disorders was D&C. Nowadays, hysteroscopic-guided endometrial biopsy is considered as the gold standard investigation for diagnosing the cause of AUB. Also, several studies have reported a false negative rate of up to 10% with plain D&C.

In our study, most of the women were between 41 and 45 years of age (53%). In a study by Patil et al.,[7] majority of the patients were between 41 and 50 years of age. Similarity, a study by Das and Mondal[8] found the average age of presentation was 39.66 ± 6.19 years.

In our study, out of 50 patients who underwent D&C, only 29 patients were proceeded with hysterectomy due to various reasons. Endometrial hyperplasia was noticed in 17.24% of patients after hysterectomy whereas only 8% of patients showed endometrial hyperplasia after curettage. None of the patient after D&C had histopathologic finding of endometrial CA, whereas it was found in 2 out of 29 patients after hysterectomy; thus, revealing the inconsistency between the two procedures. Stock and Kanbour[11] reported D&C as inaccurate, both as a sampling technique and also for diagnosing endometrial carcinoma. Only severe cases are detected by curettage with a false- negative rate of as high as 82.5%.

Our study revealed that 6.89% (out of 29%) had cervical intraepithelial lesion posthysterectomy, whereas none of them were detected after D&C. Moller and Berger[12] reported two case of endometrial carcinoma and four cases with positive cervical cytology after curettage, but it had missed one case of endometrial carcinoma; one case of fibromyosarcoma and two cases of cervical intraepithelial neoplasia (CIN). Many researchers found that patients with positive cervical cytology have a high risk of endometrial cancer.[9]

In our study, hysteroscopy detected one patient with abnormal endometrial growth which was also confirmed by histopathology giving a sensitivity of 100% which was consistent with the study done by Upadhyay et al.[10]

Conclusion

In conclusion, D&C and hysteroscopy are the two most important diagnostic modalities in perimenopausal and postmenopausal bleeding. Patients for whom ultrasonography showed focal endometrial lesions need further evaluation and hysteroscopy. Factors influencing both the success and the reliability rate should be taken into account before any endometrial biopsy sampling method.

Clinical Significance

Hysteroscopy proved to be a reliable method in terms of accuracy, sensitivity, and specificity. Many hysterectomies would have been avoided if we consider all the above factors into account. A large number of posthysterectomy specimens had no significant histopathology findings in our study.

Acknowledgment

The authors would like to thank all participants of this study.

References

1. Mishra S, Panda B. Efficacy of ultrasonography and hysteroscopy and their correlation with endometrial histopathology in a case of abnormal uterine bleeding in late reproductive age. AIMDR 2018:4(5):10–14. https://imsear.searo.who.int/handle/123456789/188258.
2. El-Ganal HH, Abd-El-Salam MM, Ghanem RM, et al. Role of diagnostic hysteroscopy and histopathology in evaluation of abnormal uterine bleeding. Egypt J Hosp Med 2018:72(7):4765–4771. DOI: 10.21608/EJHM.2018.10109.
3. Firdous N, Mukhtar S, Bilal S, et al. Role of hysteroscopy and histopathology in evaluating patients with abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol 2017;6(2):615–619. DOI: 10.18203/2320-1770.ijrcog20170393.
4. Sinha P, Yadav N, Gupta U. Use of hysteroscopy in abnormal uterine bleeding: An edge over histopathological examination. J Obstet Gynaecol India 2018;68(1):45–50. DOI: 10.1007/s13224-017-1065-5.
5. Hemida RA, Zayed AE, Shalaby A, et al. Agreement of histopathological findings of preoperative uterine curettage and hysterectomy specimens. Impact of time factor and hormonal therapy. J Exp Ther Oncol 2013;10:105–168. PMID: 24416990.
6. Sakhdari A, Moguaddam PA, Liu Y. Endometrial samples from post-menopausal women: A proposal for adequacy criteria. Int J Gynaecol Patnol 2016;35:525–530. DOI: 10.1097/PGP.0000000000000279.
7. Patil HA, Suresh AP, Mahajan V. MVP J Med Sci 2015;2:26–29. DOI: 10.15306/mvpjms/2015/v2i1/58635.
8. Das S, Mondal R. Comparison of hysteroscopy and histopathology in diagnosing abnormal uterine bleeding: An experience from a tertiary care centre of eastern India. New Indian J OBGYN 2021;7(2):135–141.
9. Tate K, Yoshida H, Ishikawa M, et al. Prognostic factors for patients with early stage uterine serous carcinoma without adjuvant therapy. J Gynaecol Oncol 2018;29(3):e34. DOI: 10.3802ligo.2018.29.e34.
10. Upadhyay A, Tyagi M, Gupta S, et al. Comparative study of hysteroscopy with ultrasonography and it's correlation with histopathology in cases of abnormal uterine bleeding in perimenopausal women. Int J Reprod Contracept Obstet Gynaecol 2022;11:791–797. DOI: 10.18203/2320-1770.ijrcog20220558.
11. Stock RJ, Kanbour A. Prehysterectomy curettage: an evaluation. Obstet Gynecol 1975;45(5):537–541. PMID: 1124168.
12. Moller LM, Berger A. prehysterectomy curettage in women with uterine fibromyomata is not worthwhile. Acta Obstet Gynecol Scand 1993;72:374–376. DOI: 10.3109/00016349309021116.