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ORIGINAL ARTICLE

Comparison between Pipelle Sampling and Hysteroscopy Guided Biopsy in Histologic Evaluation of Endometrium in Tertiary Care Hospital in Pakistan

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ABSTRACT

Introduction: Abnormal uterine bleeding is one of the commonest issues in perimenopausal age group. The proportion is 9-30% in reproductive age group. This extent rises to 70% in perimenopausal and postmenopausal women's. Irregular uterine dying (AUB) warrants an intensive assessment in perimenopausal females and subsequently it's vital to perform it in a cost-effective way with available resources.

Objective: To compare the efficacy of Hysteroscopic guided biopsy and endometrial cytology

To find out the efficacy of endometrial cytology in detecting different normal and abnormal endometrial patterns

Study design & Settings: It is a prospective comparative study conducted at Social Security Hospital, Multan Road, Lahore included patients 30 years and above with the chief complaints of abnormal uterine bleeding.

Study Duration: 01 year January 2020 to December 2020

Sample: 100 patients

Inclusion Exclusion Criteria: Females having symptoms of abnormal uterine bleeding and age above than 30 years are included in the study. The females who are pregnant and having infection or malignancy are excluded from the research

Results: This Planned comparative hospital-based study was done in one hundred patients with abnormal uterine bleeding taken after the informed consent, inclusion and exclusion criteria. Endometrial thickness was assessed and all cases with <5 mm thickness will be avoided from the study. Mean age of the patient was found 45 and standard deviation 7.43.

Practical implication

Conclusion: To get the endometrial sample by pipelle technique is a safe procedure. It has high specificity, sensitivity, positive and negative predictive values when compared to hysteroscopy. In this way, to obtain adequate endometrial sample, Pipelle biopsy should be considered as important way of investigation.

Keywords: Abnormal uterine bleeding, Pipelle, Endometerial sampling, FIGO

INTRODUCTION

Abnormal uterine bleeding is one of the commonest issues in perimenopausal age group. The proportion is 9-30% in reproductive age group. This extent rises to 70% in perimenopausal and postmenopausal ladies. Irregular uterine bleeding (AUB) warrants an intensive assessment in perimenopausal females and subsequently it's vital to perform it in a cost-effective way with available resources[(1)].

Endometrial sampling for histopathology is a major issue for the evaluation of abnormal uterine bleeding. Abnormal uterine bleeding (AUB) includes any disturbance within the frequency, regularity, term or volume of menstrual flow and non-menstrual disturbance due to any cause[(2, 3)].

Abnormal uterine bleeding is one of the foremost issues experienced within the life of women. One third of total women attending gynaecology OPD presents with complaints of abnormal uterine bleeding. In premenopausal woman, AUB is analyzed when there's alter in frequency, term or amount of bleeding during or between periods. In post-menopausal women's any vaginal bleeding which occurs one year after cessation of menses is considered unusual. The major concern is endometrial hyperplasia and carcinoma. The international federation of gynecology and obstetrics (FIGO) classification framework for the cause of AUB in non-gravid women's of reproductive age (PALM-COEIN) P-polyp, Aadenomyosis, L-leiomyoma, M-malignancy, C-coagulopathy, O-ovulatory disorder, E-endometrial cause, I-iatrogenic, N-non classified. The main point of examination of AUB is to rule out intra-uterine pathology, particularly endometrial cancer. In spite of the fact that hysteroscopy-directed endometrial biopsy is considered as gold standard for endometrial sampling, it carries the risk of Perforation, infection and general anesthesia. For endometrial biopsy by aspiration the main concerns are sampling adequacy, non sampling of focal lesions and accuracy of histopathology report of tissue sampled. Dilatation and Curettage (D and C) under general anaesthesia has long been the gold standard for the assessment of AUB. The need for this hospital admission, general anesthesia, and the cost has made it less favourable[(4)]. Recently minor operation theatre procedures which are fast, secure, and inexpensive such as pipelle biopsy device, Vabra and Z sampler have superseded this method with good patient adequacy. Pipelle may be a flexible polypropylene device which works employing a suction mechanism. It is a perfect outpatient endometrial biopsy procedure(5). Endometrial aspiration using pipelle is simpler and comfortable for patients. It does not require general anesthesia. It is additionally secure and cost compelling, precise and an outpatient procedure. It also empowers speedy sampling and the entire procedure can be completed in 10-15 minutes. There are exceptionally few studies that have analyzed the efficacy of pipelle biopsy or approved this method of endometrial sampling against the gold standard histopathological specimens which were received from hysterectomy procedures. Subsequently this study was conducted at department of obstetrics and gynecology, to analyze the role of Pipelle's endometrial sampling and its accuracy in the appraisal of endometrial pathology and its validity has been compared tohysteroscopy guided biopsy[(5-7)].

Objectives: To compare the efficacy of Hysteroscopic guided biopsy and endometrial cytology

To find out the efficacy of detecting endometrial patterns and endometrial cytology

METHODOLOGY

Study design & Settings: It is a prospective comparative study conducted at Social Security Hospital, Multan Road, Lahore included patients 30 years and above with the chief complaints of abnormal uterine bleeding.
Study Duration: 01 year i.e. January 2020 to December 2020
Sample: 100 patients
Data collection Procedure: After taking an informed consent the patient with abnormal uterine bleeding were included in the study. After taking appropriate history, all patients were subjected to schedule examination including CBC, FBS, TSH, viral screening as per hospital protocol. All cases will be assessed with pelvic ultrasound to rule out any intra uterine space occupying injury of natural pathology. Endometrial thickness will be assessed simultaneously.
Endometrial Cytology: With all aseptic measures endometrial suction collected from the uterine cavity by aspiration cannula as an outpatient method. 2 slides utilized for drawing lean uniform spread and settled by acetone alcohol arrangement. Rest of the aspirate will be protected in a container of normal saline for cell block arrangement.
Endometrial Biopsy: After 24-hour hysteroscopy guided endometrial biopsy was taken utilizing hysteroscopic punch biopsy forceps with intravenous anesthesia in minor operation theater. The tests were preserved in 10% formalin saline. Both the test was analyzed by pathologist. Saline protected test and and liquor settled slides will be utilized for cytology whereas formalin protected tests were used for histopathological analysis. At the end, both the methods were compared for statistical analysis.
Inclusion Exclusion Criteria: females included in the survey having symptoms of abnormal uterine bleeding and age above than 30 years. The females who are pregnant and having genital tract infection, pelvic inflammatory disease, coagulation disorders, Nulliparous females and malignancy are excluded from the research

RESULTS

This Planned comparative hospital-based study was done in hundred patients with abnormal uterine bleeding taking after the inclusion and exclusion criteria. Endometrial thickness was assessed and all cases with <5 mm thickness will be avoided from the study.

Table 1: Mean age of the Patients with AUB

	N	Minimum	Maximum	Mean	Std. Deviation
Mean Age	90	30	70	45	7.43

Mean age of the patient was found 45 and standard deviation 7.43

Table 2: Age wise distribution

Age Group	Number/Frequency	%age
30-40	28	31.1
41-50	42	46.7
51-60	15	16.7
61-70	5	5.5
Total	90	100

Most of the females in the age group of 41-50 i.e. 42(46.7) and the least in the age group of 61-70 i.e. 5(5.5)

Table 3: Comparison between Cytology and Histopathology

Types of Endometrium	Cytology	Histopathology
Secretory Endometrium	17	17
Proliferative Endometrium	07	6
Haemorrhagic Endometrium	18	19
Hormonal Effect on Endometrium	3	4
Non Secretory Endometrium	19	18
Atrophic	5	6
Hyperplasia without Atypia	10	13
Hyperplasia with Atypia	5	5
Cystic Hyperplasia	6	6
Total	90	90

There is a discrepancy in between the cytology and histology of this study especially in endometrial hyperplasia without atypia (simple hyperplasia), diagnosed in 10 cases of cytology though 13 cases (3 cases additional) were analyzed in histopathology. Considering histopathology as gold standard, three cases showing no correlation in cytology were diagnosed as bleeding endometrium instead of endometrial hyperplasia without atypia in histotology.

This is possibly due to inadequate cellularity in a haemorrhagic background in cytology. Other cases of cytology were well correlated with histological diagnosis.

Table 4: Specificity, Sensitivity, Positive Predictive value, Negative predictive value and Accuracy of Cytopathology over Histopathology

No.	Statistic	Value	95% CI
1	Specificity	82%	62.62% to 95.26%
2	Sensitivity	100%	93.62% to 100.00%
3	Positive Predictive value	92.45%	85.13% to 97.16%
4	Negative Predictive value	100%	85.20% to 100%
5	Accuracy	96.00%	87.69% to 98.62%

The Specificity, Sensitivity, Positive Predictive value, Negative predictive value and accuracy of cytology over gold standard histopathological confirmation are 82%, 100%, 92.45%, 100% and 96% respectively.

DISCUSSION

Abnormal uterine bleeding (AUB) could be a common reason for lady of all ages refers to their gynecologists. One third of the patients refer to the Gynecology OPD display with chief complaints of abnormal uterine bleeding. This extent rises to 70% in the perimenopausal and postmenopausal age group. The fundamental point of examination for AUB is to rule out intrauterine pathology, particularly endometrial cancer. The incidences of abnormal uterine bleeding were maximum in the age group of 41-50 years followed by 31-40 years.

In this study there was discrepancy in between the cytology and histology especially in endometrial hyperplasia without atypia (straightforward hyperplasia), diagnosed in 10 cases in cytology though 13 cases (3 cases additional) were analyzed in histopathology[8, 9].

This is often possibly due to inadequate cellularity in hemorrhagic background in cytology. This will be anticipated by increasing mastery of the test collector. The main reason for performing endometrial biopsy in women's with abnormal uterine bleeding is to confirm the benign nature of the issue, to confirm endometrial carcinoma so that medical treatment or conservative surgery can be offered and unnecessary radical surgery can be avoided. Various methods of endometrial sampling are used in practice, including invasive and non-invasive, on either an inpatient or outpatient premise[10]. Ultrasonographic measurement of central endometrial thickness (double layer) is one of the commonly utilized non-invasive methods. Ultrasonography avoids 40% of histological assessment of the endometrium, In spite of the fact that the cut-off limit for endometrial thickness is still not confirmed.

CONCLUSION

Endometrial sampling using Pipelle is a simple and safe method for getting endometrial tissue for diagnosis in patients with abnormal uterine bleeding. It is minimally invasive procedure and results in good precision due to its high specificity, sensitivity, positive and negative predictive values. It is cost-effective, cuts down the duration of hospital stay and comes about in high patient compliance in expansion to the added advantage of no

use of anesthesia or other procedural complications like perforation compared to hysteroscopy.

REFERENCES

1. Shivangi PDTP, Mohapatra D. Comparative Study of Endometrial Aspiration Cytology Using Pipelle with Hysteroscopic Guided Endometrial Biopsy in Patient with AUB (Abnormal Uterine Bleeding).
2. Javaid S, Jabeen Atta B, Azra OK, Bai M. Incidence of Positive Endometrial Pipelle Biopsies for Endometrial Carcinoma Diagnosis in Patients with Abnormal Uterine Bleeding. Journal of Research in Medical and Dental Science. 2022;10(1):75-80.
3. Qureshi AI, Shafi S, Khan M, Munir A, Sahar B, Malik A. Analysis of Histopathological Findings in Endometrium of Peri-Menopausal Women Presenting with Dysfunctional Uterine Bleeding. Pakistan Journal of Medical & Health Sciences. 2022;16(07):263-.
4. YILDIZ Ş, İsmail A. RISK FACTORS AND HYSTEROSCOPIC RESULTS FOR INSUFFICIENT TISSUE FROM ENDOMETRIAL BIOPSY. Namık Kemal Tıp Dergisi.8(2):204-11.
5. Narice BF, Delaney B, Dickson JM. Endometrial sampling in low-risk patients with abnormal uterine bleeding: a systematic review and meta-synthesis. BMC family practice. 2018;19(1):1-13.
6. Devabhaktuni P, Allani P, Komatlapalli S, Ksheerasagara RR. Hysteroscopy in one hundred cases of postmenopausal uterine bleeding, in the detection of uterine cancer and atypical endometrial hyperplasia. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2020;9(6):2253-62.
7. Ilavarasi CR, Jyothi G, Alva NK. Study of the efficacy of pipelle biopsy technique to diagnose endometrial diseases in abnormal uterine bleeding. Journal of Mid-Life Health. 2019;10(2):75.
8. Munasinghe M, Fernandopulle S, Hewavisenthi SdS. The histopathology of endometrial biopsies performed for abnormal uterine bleeding: an audit in a tertiary care centre in Sri Lanka. 2021.
9. Prifti CA, Kwolek D, Growdon WB, Palamara K. Gynecologic Malignancies. Sex-and Gender-Based Women's Health: Springer; 2020. p. 231-55.
10. Sharma J, Sharma E, Sharma S, Dharmendra S. Recent advances in diagnosis and management of female genital tuberculosis. The Journal of Obstetrics and Gynecology of India. 2021;71(5):476-87.