

Pipelle Endometrial Biopsy - A Safe Alternative to Dilatation and Curettage in Selected Patients

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ABSTRACT

Background Abnormal uterine bleeding in perimenopausal and postmenopausal women is associated with endometrial carcinoma in approximately 10%. Endometrial biopsy is mandatory in these patients. Endometrial sampling with Pipelle is outdoor, cost effective and a safe procedure

Aim: To assess efficacy of Pipelle sampling in selected high risk patients.

Methodology: A descriptive study was carried out in Nawaz Sharif Social Security Teaching Hospital Multan road, Lahore from May 2017 to November 2017. Total no. of 33 patients were included in this study, who presented with abnormal uterine bleeding, have co morbidity and evidence of thickened endometrium on Ultrasonography. Pipelle sampling was used as diagnostic tool to obtain endometrial biopsy after informed consent. Histopathology reports were followed and reports showing malignancy were confirmed by specimen obtained on laparotomy.

Results: The most common age group was 46-55 years that is 24(72.7%). 45% patients had parity >4. Most common presentation was irregular vaginal bleeding (78%). Ultrasound (USG) findings showed increased endometrial thickness in 16(48%) perimenopausal age group and 4(12%) in postmenopausal age groups. Histopathology reports showed hormonal imbalance in 21(63%), endometrial hyperplasia in 2(6%), endometrial carcinoma in 4(12%), chronic endometritis in 2(6%).

Conclusion Pipelle sampling is an effective tool to diagnose endometrial pathology in patient with thickened endometrium and co morbid conditions where general anesthesia can be avoided by choosing pipelle.

Key words: Endometrial sampling, Endometrial hyperplasia, Endometrial carcinoma, Postmenopausal bleeding, Menorrhagia, Irregular bleeding.

INTRODUCTION

Abnormal uterine bleeding (AUB) is a common gynecological symptom. It includes change in menstrual blood loss amount, or pattern of bleeding. The PALM-COEIN (Polyp, Adenomyosis, Leiomyoma, Malignancy, Coagulopathy, Ovulatory disorders, Endometrial, Iatrogenic and not otherwise classified) system was developed to describe the causes of AUB by FIGO¹. Disease directly affects the woman and her family, and also associated with significant costs to both economy and health service^{2,3}. It is responsible for 33% of outdoor visits for consultation² and 69% referral in perimenopausal and postmenopausal age group⁴. The bleeding can be a sign of an underlying pathology, which may include infection, benign and malignancy⁵. Evaluation of abnormal vaginal bleeding above 40 years of age is very important to rule out endometrial carcinoma^{6,1}, so that appropriate treatment is given to patients according to nature of disease and unnecessary surgical interventions should be avoided. Simple structured transvaginal ultrasound can be performed and it is helpful in diagnosis of AUB and determine the cases when additional invasive investigations are required⁷. USG is especially helpful in postmenopausal female, where thickened endometrium more than 4mm needs evaluation. Though many other factors such as parity, BMI, drugs and serum estradiol needs to be considered⁸. Conventional surgical technique for endometrial sampling is dilatation and curettage (D&C) but procedure is associated with certain risks⁵. These

include need for anesthesia with subsequent risk of infection, perforation and anesthesia related complications. The use of endometrial pipelle was introduced as an outpatient device to obtain an endometrial biopsy in 1980s⁹.

The detection rate for endometrial carcinoma using the Pipelle device in one meta-analysis of 39 studies was 99.6% in postmenopausal women and 91% in premenopausal women¹⁰. This is cost effective as it saves hospital admission but there are certain drawbacks¹⁰. The most important is inadequate sample as it covers only 4-5 % surface area. In developing countries like Pakistan where health expenditures are born by patients, pipelle can be safe choice in patients. It will save lot of out-of pocket health expense, currently this is around 70% of the total health expenditures in our country¹¹. The current study is designed to assess efficacy of pipelle as safe alternate to D&C.

METHODOLOGY

This study was conducted in Department of Gynae and Obstetrics, Nawaz Sharif Social Security Teaching Hospital Multan Lahore. Hospital is attached with University College of Medicine and Dentistry, the University of Lahore. This research was approved by the Ethical Committee of the institution. The duration of study was six months from May 2017 to November 2017. Patient with abnormal vaginal bleeding having thickened endometrium on USG and irregular vaginal bleeding and co morbidity were included in the study. Patient with irregular vaginal bleeding with structural deformity of uterus were excluded from the study. A proforma was designed and purposive sampling was

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used to select the patient for study. Consent of patient was obtained about the study, confidentiality and their right to withdraw from study if they want to do so.

Operational definitions

Pipelle sampling: It is a thin plastic suction tube, 3mm in diameter, with graduated markings designed to create a high vacuum without vacuum pump. The Pipelle will pass through the cervical canal to the uterine cavity and endometrium to obtain a sample for histological analysis.

Co morbidity: include morbid obesity, hypertension, Diabetes mellitus, hepatitis carrier state with deranged liver function and heart disease. These disorders made patient high risk for anesthesia.

Thickened endometrium:-Endometrial thickness more than 8mm in premenopausal female and more than 4 mm in postmenopausal patient.

Structural deformity of uterus: This include distorted uterine cavity from organic cause like fibroid or adenomyoma.

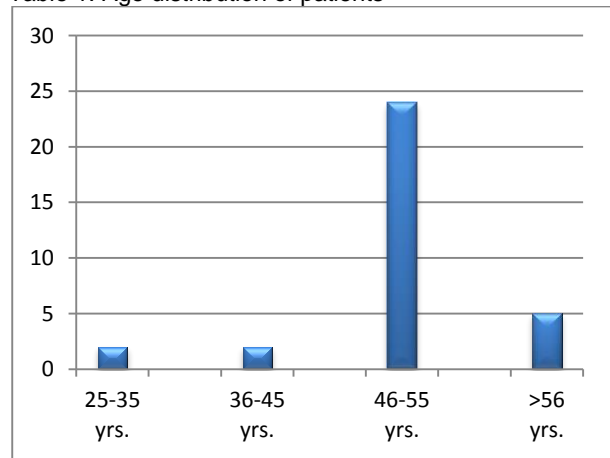
Data collection: All patients presenting in gynae outdoor with abnormal uterine bleeding proforma was maintained. Their demographic profile, detailed menstrual history, co morbid conditions were recorded. Later patients who fulfill inclusion criteria were included in study. Pipelle endometrial sampling was performed by senior obstetrician in all patients to avoid skill related bias. Histopathological reports of patients were collected and analyzed. Those having reports with malignancy were followed for definitive procedure to assess the accuracy. All patients had follow up till six week and any other intervention recorded.

Data analysis: Data analyzed and descriptive statistics were obtained using SPSS version 21.

RESULTS

From 295 patients of abnormal uterine bleeding who reported in outdoor, 33 were included in study. Majority was in perimenopausal age group 24(72.7%). The table 1 describes the age distribution of patient in the study. Majority of patients were multipara, 45% had parity >4(n=15), rest are summarized in table 2.

Table 1: Age distribution of patients



Most common presentation was irregular vaginal bleeding in 26 patients (78%). Five females presented with postmenopausal bleeding (16%) as shown in table 3

Ultrasound (USG) was done in all patients. 11 patients showed endometrial thickness between 8 to 12mm. 17 had increased endometrial thickness more than 12mm in premenopausal age group. Two patients had incident finding of ovarian cyst.

All the postmenopausal women⁵ were those who were not medically fit for diagnostic D & C due to co morbid condition. Table 4 depicts the percentage of co morbid conditions. All postmenopausal patients had laparotomy and histopathology confirmed diagnosis of endometrial carcinoma in all patients.

Histopathology reports collected and analyzed. 63% female had hormonal imbalance. In these patients 42% had proliferative while 21% had secretory phase. Endometrial carcinoma was present in 4(12%) and 6% patients showed endometrial hyperplasia without atypia.

Table 2: Parity wise distribution of patient

Parity	n	%age
P ₂	5	15
P ₃	6	18
P ₄	7	21
>P ₄	15	45

Table 3 Clinical presentation of patient

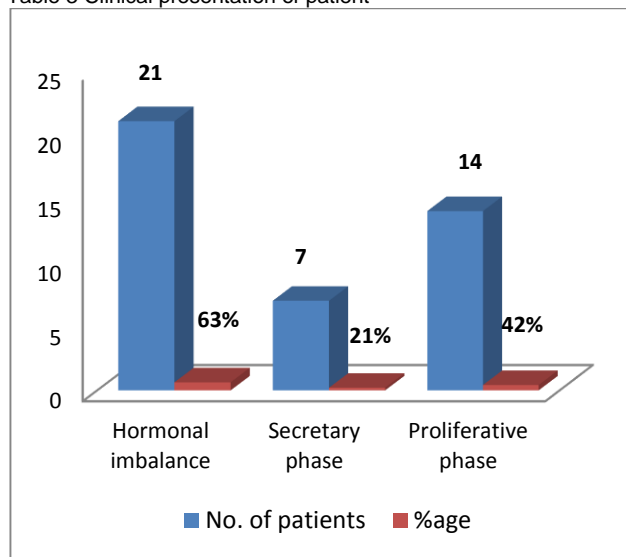


Table 4 :Co morbid conditions in postmenopausal female

Medical disorders	n
Hypertension with hepatitis c and deranged LFTs.	2
Valvular heart disease	1
Diabetes and hypertension	1
Diabetes with morbid obesity	1

DISCUSSION

Abnormal uterine bleeding (AUB) is a common and debilitating condition. It is important to exclude malignancy in perimenopausal and post menopausal female with abnormal uterine bleeding. Endometrial sampling is most important step for diagnosis of benign and malignant lesions, so that conservative treatment is offered to benign lesions rather than extensive radical surgical treatment that has high morbidity and mortality. Traditionally, dilatation and curettage (D&C) is used to obtain endometrial sampling. In late 20th century, the role of (D&C) became

questionable in term of accuracy and tissue yield. Pipelle suction aspirator is a prototype of devices used to obtain endometrial sampling. These outpatient procedure of endometrial sampling had high accuracy rates to detect endometrial carcinoma¹².

In our study 33 patients were included and 24 patients were in perimenopausal and postmenopausal age group i.e. 72.4%. Most common presentation was irregular vaginal that account 78% and 2nd common presentation was postmenopausal bleeding that account 15%.

Our study shows 97% adequacy rate in sample collection. This is consistent with studies conducted in 2007 who reported has 98% adequacy in sample collection¹³. A study from India, showed sensitivity and specificity in endometrial carcinoma (80% and 100% respectively), atypical endometrial hyperplasia (100% and 99.5% respectively)¹⁴.

In our study histopathology reports showed hormonal imbalance in 63% cases, endometrial hyperplasia and chronic endometritis was found in 6% each. A study conducted in the same hospital showed proliferative and secretory endometrium in 46% and 34% patients respectively¹⁵. A study conducted in Thailand also reported hormonal imbalance as main etiological factor (proliferative and other endometrium in 48.5%)¹⁶

Endometrial thickness more than 4mm in menopausal female necessitates biopsy to exclude malignancy¹⁷. In this study 4(12%) patient had endometrial carcinoma, all were postmenopausal. In one menopausal female the cause of bleeding was endocervical polyp. All patient underwent laparotomy and histopathological diagnosis confirmed.

Though abnormal uterine bleeding is an economic burden for developed world, it is major concern in our setup too. We frequently lose our patients during follow up, as they cannot afford the transport expense. In this scenario, saving the expense of hospital admission, operation theatre and medicines are saved by choosing pipelle will offer much relief.

CONCLUSION

The present study concludes that Pipelle can safely replace conventional endometrial sampling through dilatation and curettage. Careful selection of patient especially those with thick endometrium decreases the chance of inadequate sample.

Limitations of study: Our study is limited to one hospital only with a small sample size. Pipelle is cost effective and has better patient compliance, so efficacy needs to be evaluate in multiple centers.

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