Effectiveness of Pipelle as Endometrial Sampling Procedure in Comparison with Dilatation and Curettage

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Abstract

Background: To determine safety and effectiveness of pipelle for taking endometrial biopsy as out patient procedure in comparison with dilatation and curettage (D&C).

Methods: In this comparative study, detailed clinical evaluation of 80 patients was done to establish indication for endometrial sampling. Subjects were divided into 2 groups. In 1st group pipelle (n=40) procedure was performed as outpatient procedure without analgesia under aseptic conditions. Biopsies were taken and sent for histopathology and for acid fast bacilli in cases of infertility. Subjects were retained for 30 min to observe for any complication. In 2nd group (n=40) patients were admitted from out patient department and D&C done on very next day in operation theatre as formal procedure under anaesthesia. Patients were retained in ward after procedure to observe any post operative complications for one day. Samples were sent for histopathology. Chi Square test was used for statistical analysis.

Results: There was no case of perforation in both groups. In first group of Pipelle 36 cases had no pain. When compared to second group statistical significance was .000. Mild bleeding was observed in 2 cases of pipelle as compared to 4 cases of 2nd group. Sample was adequate in 37 cases of pipelle while in 39 cases of D&C. Histopathology report when compared in 2 groups showed statistical significant difference was 0.05.

Conclusion: Endometrial Biopsy with Pipelle is safe, efficient and cost effective means of evaluating uterine endometrium. It is associated with minimal discomfort, adequate sampling without need of anaesthesia.

Key Words: Pipelle, Dilatation, Curettage, Endometrial biopsy, D&C

Introduction

The development of equipment and techniques for office based endometrial biopsy challenged the need for diagnostic D & C performed in the hospital and requirement of anaesthesia.1

The pipelle endometrial sampling device is the most popular method for sampling endometrial lining. It samples 5-15% of the endometrial surface area.2 Endometrial biopsy (EB) is a safe efficient and cost effective means of evaluating the uterine endometrium. The procedure is usually associated with minimal discomfort and is easily accomplished in the out patients setting. It is mostly used in the perimenopausal or post menopausal women to evaluate abnormal uterine bleeding and to rule out endometrial cancer. It also identifies other hormonally induced changes in uterine lining.2,3

EB is sufficiently sensitive to allow accurate diagnosis of endometrial hyperplasia or cancer. However EB may fail to detect other uterine pathology such as polyps and sub mucus leiomyomas. All sampling devices perform better when pathology is global rather than focal. Indications of EB are abnormal uterine bleeding, to rule out endometrial carcinoma, to identify causes of post menopausal bleeding and to evaluate infertility. Contraindications to endometrial biopsy are pregnancy, presence of acute cervicitis or endometritis, coagulation disorders and febrile illness.4

EB causes minimal discomfort, abdominal cramps and vagal reaction. Rare complications include excessive uterine bleeding. They may occur in cases of undiagnosed coagulopathy, uterine perforation, bacterial septicemia and endocarditis.5 Results of office sampling are comparable to those of D &C with an accuracy of 90 to 95 %. Commonly used sampling devices include pipelle aspirator, Novak curette and vabra aspiration.6,7

Whenever EB (Blind sampling) fails to yield sufficient tissue for laboratory examination or when the report does not explain clinical symptoms of disease, doctor should consider referring the women for hysteroscopy and curettage to identify possible missed pathology. The size and type of tumour and its location within uterine cavity, the mechanism of sampling and preparation method influence the detection of uterine cancer.8
The pipelle aspirator is made up of a clean, flexible, polypropylene sheath with an inner plunger. The device is disposable, easy to use and well tolerated by patients. No external suction is required. The pipelle enables quick sampling of the endometrium (5-15 sec) and the entire procedure can be completed within 10-15 minutes. The pipelle has 100% sensitivity and 99% specificity in diagnosing endometrial cancer. So substantial number of traditional diagnostic curettage can be substituted by pipelle, which is an inexpensive outpatient procedure. D & C requires admission, anaesthesia and causes much discomfort to the patient as well as risk of perforation, infection and cervical damage is high as compared to pipelle procedure.

**Patients and Methods**

This comparative study was conducted in Obs/Gynae Unit-I Holy Family Hospital. It included all those women who required endometrial sampling for abnormal uterine bleeding, postmenopausal bleeding, and cases of infertility. All those women who required endometrial sampling but had cervicitis, vaginitis, any suspected or overt cervical pathology like polyps ectopy, growth and coagulopathy were excluded. Abnormal uterine bleeding due to pregnancy related problems like abortion molar pregnancy were also excluded. Eighty patients were selected who required endometrial biopsy. Clinical evaluation of each patient was done by detailed history and examination, specifically menstrual history. Patient were divided in two groups, Group 1 i.e. pipelle endometrial biopsy included 40 cases and Group 2 also included 40 patients in which D&C was done. Among 80 cases 21 presented with menorrhagia, 38 with polymenorrhagia, 14 with continuous vaginal bleeding, 4 with post menopausal bleeding and 3 cases of infertility. Ultrasound was normal in 47 cases, 16 had fibroid uterus while thick endometrial echo was seen in 17 cases. During pipelle in 36 cases there was no pain, while mild pain was encountered in 3 cases and moderate pain in one case, who was already anxious before procedure. When compared to second group statistical significance difference was .00 (Tables 1 to 3).

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Not adequate</th>
<th>Adequate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipelle</td>
<td>3</td>
<td>37</td>
<td>40</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>1</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>76</td>
<td>80</td>
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</table>

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No bleeding</th>
<th>Mild bleeding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipelle</td>
<td>38</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>36</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Both</td>
<td>74</td>
<td>6</td>
<td>80</td>
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</table>

Table 3: Comparison of histopathology in both groups

<table>
<thead>
<tr>
<th>Histopathology</th>
<th>Pipelle (n)</th>
<th>D&amp;C (9)</th>
<th>Total (9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early sec endo</td>
<td>8</td>
<td>15</td>
<td>23</td>
</tr>
<tr>
<td>Mid sec endo</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Late sec endo</td>
<td>8</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Early prolif endo</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Late prolif endo</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Inadequate sample</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Simple cystic</td>
<td>4</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Atypical Hyperplasia</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Sec: Secretory; Prolif: Proliferative; Endo: Endometrium

As dilatation and curettage was performed under anaesthesia, no pain felt by any patient. Mild bleeding was observed in 2 cases of pipelle and later discharged. Endometrial curettings were sent for histopathology in formalin and results were documented on proforma.

**Results**

Total number of cases included were 80. Group 1 i.e. pipelle endometrial biopsy included 40 cases and Group 2 also included 40 patients in which D&C was done. Among 80 cases 21 presented with menorrhagia, 38 with polymenorrhagia, 14 with continuous vaginal bleeding, 4 with post menopausal bleeding and 3 cases of infertility. Ultrasound was normal in 47 cases, 16 had fibroid uterus while thick endometrial echo was seen in 17 cases. During pipelle in 36 cases there was no pain, while mild pain was encountered in 3 cases and moderate pain in one case, who was already anxious before procedure. When compared to second group statistical significance difference was .00 (Tables 1 to 3).
in 4 cases of D&C, so statistical significance was 0.30. There was no case of perforation in both the groups. Regarding sample adequacy, it was adequate in 37 cases of group 1 and 39 cases of Group 2 so statistical significance was 0.675. There was no case of infection reported in both groups despite that no antibiotic was given in pipelle group while D&C cases received antibiotic cover.

Discussion

The use of outpatient endometrial sampling techniques reduces the number of hospital admission and general anesthesia with their attendant risks. Cervical dilatation is not required and the risk of over curettage and haemorrhage are reduced.12

Akhtar AZ study on pipelle revealed satisfactory result with sample sufficient in 77% cases and minimal discomfort in 88% cases, while in our study sample was adequate in 37 cases and pain only in 4 cases. Study concluded that substantial number of traditional curettage can be substituted by pipelle curettage, which is an inexpensive outpatient procedure.12

Another study by Heing, also showed that histologically tissue obtained with the pipelle was satisfactory in 50 women who were sampled by pipelle and Novak Curettes. In his study 99% women preferred biopsy with pipelle. 13 Paul et al showed high adequate sample with pipelle which was 98.7%. 14

Grimes D and another study by Nicholas both showed that office endometrial sampling is as effective as curettage, less costly and causes significantly less pain than metal curette.15,16 Similarly in our study pipelle was found equally effective endometrial sampling procedure in comparison to dilatation and curettage. A large meta-analysis comparing various devices reported pipelle to be the most sensitive technique. 8

Endometrial biopsy is a blind procedure and should be considered part of the evaluation that could include imaging studies, such as hysteroscopy or transvaginal ultrasonography. A study by Zuber reported that post operative infection is rare but may further be prevented through the use of prophylactic antibiotic. Intra and post operative cramping are frequent side effects similar to our study. He also concluded office endometrial suction to have diagnostic accuracy that is equal or superior to the dilatation and curettage procedure.17

Conclusion

As an outdoor procedure endometrial biopsy with pipelle can safely replace conventional D and C procedure.

References

2. AFGO educational series on woman's health issues, Clinical management of abnormal uterine bleeding, Association of Professors of Gynecology and Obstetrics, May 2002
6. Apgar BS, Newick GR, Endometrial biopsy. Primary care 1997;24:303-26
7. Apgar BS, Dysmenorrhea and dysfunctional uterine bleeding, primary care 1997;24:161-78