

# Comparison between Pipelle and Dilatation & Curettage for Endometrial Sampling in Abnormal Uterine Bleeding

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## ABSTRACT

**Aim:** To compare the adequacy and safety of pipelle device and dilatation and curettage (D&C) for taking endometrial biopsy in patients of abnormal uterine bleeding (AUB).

**Methods:** This single blinded trial was conducted on 200 patients in Sheikh Zayed Medical College/Hospital Rahim Yar Khan. Patients of AUB of age 35-70 years and having no gross pelvic pathology, were included. In Group A (n=100) Pipelle was performed as outpatient procedure without analgesia and tenaculum under aseptic conditions. In Group B (n=100) patients were admitted from outpatient department and D&C done on very next day in operation theatre after complete work up and pre anaesthesia evaluation under general anaesthesia.

**Results:** Mean post-procedural pain was higher in D&C group, severe pain occurred in 65% patients in D&C group and in 5% patients in pipelle group, moderate pain occurred in 17% patients in pipelle group and in 30% patients in D&C group (p-value <0.001). adequacy of specimen was comparable in both groups, specimens were adequate in 94% patients in pipelle group and in 95% patients in D&C group (p-value 0.64). Time of mobilization was significantly prolonged in D&C group; 16.63±2.81 hours versus 5.26±0.92 hours in pipelle group (p-value <0.001).

**Conclusion:** Pipelle has acceptable adequacy as compared to the D&C for taking endometrial biopsy. Moreover, it allows earlier mobility and early return to daily life activities in patients with abnormal uterine bleeding (AUB).

**Keywords:** abnormal uterine bleeding (AUB), pipelle device, dilatation and curettage.

## INTRODUCTION

Abnormal uterine bleeding (AUB) is a uterine bleeding with abnormally high volume and time.<sup>1</sup> It affects 14% to 25% females of reproductive age.<sup>2,3</sup> It is the 4<sup>th</sup> common reason of referral to gynecology units.<sup>4,5</sup> AUB significantly affects quality of life and significantly increase hospital cost and absence from work.<sup>6,7</sup>

Diagnosis of AUB is mandatory and of critical importance in females of age <40 years and in menopause to exclude endometrial carcinoma and to confirm the benign cause of the disease and to decide the appropriate management strategies<sup>8</sup>.

Dilatation and curettage (D&C) is a gold standard method for endometrial sampling but it has some shortcomings such as in nearly 60% sampling procedures sample is inadequate and there is a probability of use of general anesthesia, perforation and infection.<sup>9,10</sup> So to overcome shortcomings of D&C, newer techniques e.g. aspiration cytology, brush cytology and pipelle technique has been developed<sup>11-13</sup>. Among these new techniques pipelle has been shown to be the most accurate one.<sup>14</sup> Failure rate of pipelle is reported to be about 13%, and success rate is higher in post-menopause women. Even D&C also has failure rate even being more invasive procedure as compared to pipelle<sup>15</sup>.

There are still concerns concerning the competence of sample, non-sampling of focal intrauterine lesions and precision of histopathology reports of tissue obtained. Because still no technique can take appropriate sample by scraping the entire uterine cavity, so it's necessary to consider most precise technique for each women of AUB. This study was conducted to establish the frequency of

outcome and adequacy of endometrium sampled by pipelle and dilatation and curettage for histopathology.

## METHODS

This single blinded trial was conducted on 200 patients in Sheikh Zayed Medical College/Hospital Rahim Yar Khan. Patients of AUB of age 35-70 years and having no gross pelvic pathology, were included. Patients presenting with pregnancy related bleeding, lower urinary tract infections, cervical stenosis and thyroid disease were excluded. Written consent from each patient regarding study participation was taken.

In all patients, trans-vaginal USG was done, patients of AUB with endo-metrial >12 mm in menopausal phase and 5-12 mm in post-menopause were selected for further analysis.

Before doing the procedure, complete blood profile including, complete blood count, coagulation profile, fasting blood sugar (FBS), liver and renal functions test reporting was done.

Patients were randomly allocated by computer generated method to one of the two groups. In Group A (n=100) Pipelle was performed as outpatient procedure without analgesia and tenaculum under aseptic conditions. In Group B (n=100) patients were admitted from outpatient department and D&C done on very next day in operation theatre after complete work up and pre anaesthesia evaluation under general anaesthesia.

In pre-menopausal women sample was done during luteal phase of menstruation, while in post-menopause procedure was done without any restriction.

After taking biopsy specimens were sent to histopathology for further evaluation of cause of AUB. Adequacy of sample for histopathology, patient reported

pain and mean time for mobilization and hospital stay of both groups was compared.

Data analysis was computer based by using SPSS version 20.0. Comparison of outcome of both groups was done by using Chi square test for adequacy and pain.  $P \leq 0.05$  was taken as significant.

## RESULTS

Mean age of the patients was  $45.63 \pm 4.98$  and  $45.57 \pm 5.85$  years respectively in group-A and B (p-value 0.93). Mean age of menarche in group A was  $12.92 \pm 0.27$  year while in

group-B mean age of menarche was  $12.95 \pm 0.21$  (p-value 0.38) [Table 1].

Mean post-procedural pain was higher in D&C group, severe pain occurred in 65% patients in D&C group and in 5% patients in pipelle group, moderate pain occurred in 17% patients in pipelle group and in 30% patients in D&C group (p-value  $< 0.001$ ). adequacy of specimen was comparable in both groups, specimens were adequate in 94% patients in pipelle group and in 95% patients in D&C group (p-value 0.64). Time of mobilization was significantly prolonged in D&C group;  $16.63 \pm 2.81$  hours versus  $5.26 \pm 0.92$  hours in pipelle group (p-value  $< 0.001$ ) [Table 2].

Table 1: Baseline Study Variables.

	Group-A (Pipelle)	Group-B (D & C)	P-value
Mean Age	$45.63 \pm 4.98$	$45.57 \pm 5.85$	0.93
Age of Menarche	$12.92 \pm 0.27$	$12.95 \pm 0.21$	0.38
Parity	$5.17 \pm 2.24$	$4.88 \pm 2.63$	0.40

Table 2: Comparison of study Outcomes.

	Group-A (Pipelle)	Group-B (D & C)	P-value
<b>Post-Procedural Pain Score</b>			
Mild	75 (75%)	05 (5.0%)	$< 0.001$
Moderate	17 (17.0%)	30 (30.0%)	
Severe	05 (5.0%)	65 (65.0%)	
<b>Adequacy of Specimen (%)</b>			
Yes	94 (94%)	95 (95.0%)	0.64
No	06 (6.0%)	5 (5.0%)	
<b>Mean time of Mobilization (hours)</b>	$5.26 \pm 0.92$	$16.63 \pm 2.81$	$< 0.001$

## DISCUSSION

AUB affects  $> 2$  million females worldwide and is a major cause of referral to hospitals. Nearly 150,000 hysterectomies are done every year. So timely and accurate diagnosis of cause of AUB is of prime importance.

In present study we evaluated and adequacy and safety of D&C with pipelle. D&C is an invasive test and requires general anesthesia. while pipelle device is used as an out-patient procedure as a non-invasive test and gives more accurate results if endo-metrial thickness  $> 5$  mm.<sup>16,17</sup> keeping in view this, we excluded patients having endometrial thickness  $\leq 4$  mm.

The effectiveness of diagnostic procedures is influenced by many factors including patient characteristics, the person who is taking the specimen and the pathologist who prepares the specimen. Till now no standard pathomorphological criteria have been developed for assessing the quality of samples. Furthermore, the pathologist uses their own protocols and criterion for interpretation and preparation of biopsy samples. These are the main hurdles interpreting the results of different specimen taking techniques and comparing them with published studies.

In present study we found lower pain score in pipelle as compared to the D&C. severe pain occurred in 65% patients in D&C group and in 5% patients in pipelle group, moderate pain occurred in 17% patients in pipelle group and in 30% patients in D&C group.

A study conducted by Razk et al. found severe pain necessitating analgesia in 31.8% patients in pipelle group and in only 17.9% patients in D&C group and they reported adequate sampling in 95.1% patients in pipelle group and in 96.1% patients in D&C group<sup>18</sup>.

Mechado et al. conducted a trial on diagnostic accuracy of pipelle for detection of endometrial cancer, they reported sensitivity of 84.2%, specificity 99.1%, and accuracy of 96.9% and concluded that pipelle can be considered as ideal modality of taking endo-metrial biopsy<sup>19</sup>.

Another study by Dijkhuizen et al. concluded that pipelle is the best instrument for taking endo-metrial samples with high detection rates of 99.6% in post-menopausal females and 91% in pre-menopausal females<sup>20</sup>.

We found that the pipelle is a user-friendly and patient-friendly device. In 94% of cases the sample was adequate. In D & C group 95% of cases the sample was adequate. Comparable results found in both groups. Other studies have also shown that pipelle and D&C produced the same results in detection of endometrial pathology<sup>21,22</sup>.

## CONCLUSION

Pipelle has acceptable adequacy as compared to the D&C for taking endometrial biopsy. Moreover it allows earlier mobility and early return to daily life activities in patients with abnormal uterine bleeding (AUB).

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