

## Original Article

# Diagnostic Value of Endometrial Sampling with Pipelle Suction Curettage for Identifying Endometrial Lesions in Patients with Abnormal Uterine Bleeding

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## Abstract

**Background:** While determining the cause of abnormal uterine bleeding, sampling from the endometrium is necessary. Considering that pipelle suction curettage can be performed on an out patient basis and does not require hospitalization, using anesthesia and cervical dilatation, we performed this study. The aim of this study was to compare the diagnostic value of dilatation and curettage (D&C) with pipelle suction curettage.

**Methods:** This study was quasiexperimental on 200 pre and postmenopausal patients with abnormal uterine bleeding who referred to Shabihkhani hospital in Kashan, Iran. Endometrial sampling was performed in all patients with two methods namely pipelle and D&C. A pathologist examined the samples each having a predetermined code.

**Results:** The mean age of subjects was  $46.2 \pm 6.2$  years, minimum age was 35 years and the maximum was 70 years. The various pathological lab findings were proliferative endometrium, secretory endometrium, atrophic, decidua, cystic and adenomatous hyperplasia. The reports were the same in two methods except for 2 cases where they were different: secretory endometrium with D&C but cystic hyperplasia in pipelle method.

**Conclusions:** The result of our study shows the comparability of obtaining endometrial sample by pipelle with D&C. Due to comfort and convenience of patients in pipelle method especially in the office setting which does not need anesthesia, pipelle method can easily be employed instead of D&C.

**Key words:** Pipelle Suction Curette, Dilatation and Curettage, Premenopause, Postmenopause.

Endometrial carcinoma is the most common malignancy of the female genital tract in the United States. Developing countries and Japan have incidence rates four to five times lower than western industrialized nations with the lowest rates being in India and south Asia. It is predominantly a disease of affluent. Obese, postmenopausal women of low parity although an increasing proportion of younger patients with endometrial cancer has been reported. Any factor that increases exposure to unopposed estrogen increases the risk of this cancer. Screening for endometrial carcinoma or its precursors (hyperplasia) is justified for certain high risk women<sup>1</sup>. In the case with abnormal uterine bleeding (shortening of cycles, heavy bleeding or post meno-

pausal bleeding) sampling of endometrium for ruling out a neoplastic process as the source of bleeding is mandatory<sup>2</sup>.

Dilatation and curettage (D&C) is a commonly performed procedure for both diagnostic and therapeutic benefits (second most frequent gynecologic procedure in USA). Office endometrial biopsy can often expedite appropriate evaluation and therapy and in most cases can be done instead of D&C. Novak curette (5 mm in diameter) can induce some discomfort at the time of its passage but newer silastic curettes, have smaller diameter (3 mm), are flexible and better can be tolerated by patients. Pipelle is a

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flexible polypropylene endometrial biopsy cannula not requiring a syringe or pump. Office biopsy does not require general anesthesia or cervical dilatation and permits almost painless endometrial sampling<sup>2,3</sup>.

This study was designed to compare the result of endometrial sampling by pipelle suction curette with that of D&C in a sample of pre and postmenopausal women.

## Materials & Methods

After institutional approval and informed patients' consent, 200 consecutive pre and postmenopausal women with abnormal uterine bleeding who referred to Shabihkhani hospital in Kashan, Iran, from September 2000 to September 2001 were enrolled into the study. Demographic and baseline data consisting of age, parity, weight, pattern and amount of bleeding, contraception method and condition of pain (having or not having dysmenorrhea) were recorded for each patient.

For Endometrial sampling, each patient was transferred to the operating theatre. After general anesthesia and preparing the patient, the pipelle sample was taken first. According to the protocol for this procedure sampling by pipelle took 30 seconds. Then samples were placed in the sampling container and then D&C was performed and the collected samples were placed in separate containers. Each container was identified by a unique label and sent to the pathologist. The pathologist who examined the samples was not aware of the method of sampling. After completion of the study, pathologist's reports were compared between two methods.

## Results

Subjects in this study were 200 female patients in the beginning, but 33 patients were excluded since there were errors and difficulties in collecting their samples. The mean age of subjects was  $46.2 \pm 6.2$  years, the minimum age was 35 years and the maximum was 70 years. 27.5% of the subjects were obese, 46.1% overweight and 26.3% were in normal weight group. Quadriparous patients had more sufficient samples than others. None of the patients were nuliparous.

The sample sufficiencies of the two methods were comparable: 157 (94%) in pipelle vs. 156 (93%) in D&C.

The types of endometrial lesions according to pathology reports consisted of secretory and proliferative endometrium, cystic and adenomatous hyperplasia, atrophic and decidua. The reports were the same for the two methods except for 2 cases where they were different: secretory endometrium in D&C method but cystic hyperplasia in pipelle method.

Cystic hyperplasia (7.5%) was more frequent in premenopausal group. Also, the cases of adenomatous hyperplasia (3.4%) were only found in the menopauseal group.

The highest frequency of cystic hyperplasia (28%) was found in menometrorrhagic patients and in age-group 45-49 years old (1.96%). The highest frequency of cystic hyperplasia (27.9%) was found in overweight patients and patients who did not use any forms of contraception (30.5%).

## Discussion

In a study by Schneider J. et al the reliability of the Cornier pipelle as a diagnostic tool for sending endometrial carcinoma patients directly to surgery was evaluated. Not performing dilatation and curettage under general anesthesia prior to surgery resulted in a significant saving both in hospitalization costs and bed occupation. The sensitivity for carcinoma diagnosis was 100% but in 10.7% final pathological report (after hysterectomy) revealed discordant histological subtype which could lead to the choice of an inadequate surgical strategy<sup>4</sup>.

Dijkhuizen FP et al performed a meta-analysis to assess the accuracy of endometrial sampling devices in the detection of endometrial carcinoma and hyperplasia. They concluded that endometrial biopsy with the pipelle is superior to other endometrial techniques in the detection of endometrial carcinoma and atypical hyperplasia and is more accurate in postmenopausal than premenopausal women<sup>5</sup>.

In another study by Bunyavejchevin, the sensitivity and specificity of pipelle in endometrial tissue sampling compared to fractional curettage were 87.5 and 100% respectively. One of 3 cases of adenocarcinoma of the endometrium could not be detected by pipelle. False negative could occur especially in the focal malignancies of the endometrium<sup>6</sup>. In the present study, there was no case of malignancy.

In the study by Yang GC et al, the size and type of tumor and its location within the uterine cavity

influenced the detection of cancer by pipelle. This device could miss adenocarcinoma in a polyp and leiomyosarcoma<sup>7</sup>.

Compared to other studies, one important point in our study was that we did not have any case of carcinoma or atypical hyperplasia. This can be explained by lower frequency of endometrial carcinoma in our country<sup>1</sup>. So, to calculate sensitivity, specificity and accuracy for detection of endometrial carcinoma, it seems that similar studies must be done on larger groups of patients. In the study by Dijkhuizen, he concluded that pipelle is more sensitive in postmenopausal patients<sup>5</sup>. Use of vaginal ultrasound in menopause increases sensitivity of pipelle to %90<sup>8</sup>.

Pipelle can miss focal cancers<sup>7, 9</sup>. Therefore a negative biopsy in a symptomatic patient must be

followed by a fractional curettage under anesthesia<sup>1</sup>. According to the findings of this research and in discriminatory diagnostic accuracy of pipelle and D&C method, researchers concluded that based on comfort and convenience of patients in Pipelle method, and as there is no need for hospitalization and using general anesthetics for patients especially those with a systemic disease, Pipelle method can be employed instead of D&C. Of course pipelle can have some limitations. When adequate sample can not be taken by pipelle, Novak curet to can be used to complete sampling. Pipelle can miss focal cancers and polyps. Therefore negative biopsy in a symptomatic patient must necessarily be followed by other diagnostic methods such as D&C or hysteroscopy directed biopsy<sup>1,2</sup>.

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