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Original Research Article

Comparative Study of Pipelle Endometrial Sampling versus Dialatation and Curettage in Women with Abnormal Bleeding in Uttar Pradesh Population

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Conflict of interest: Nil

Abstract

Background: Though D & C is a gold standard method to find out the cause of abnormal bleeding in perimenopausal or postmenopausal women. But D & C technique has many risk factors that lead to complications, like abnormal bleeding and prolonged morbidity hence, a safer and alternate method is preferred, like pipelle.

Method: 90 (ninety) patients above 40 years of age with abnormal uterine bleeding were admitted. Studied with a pipelle device followed by D & C, and both samples were sent to a pathologist, and both histopathological reports were compared.

Results: 87.7% adequacy sampling was obtained in both groups, 11.1% scanty in pipelle, and 8.8% in the D & C technique. Proliferation of endometrium and secretory endometrium rates was higher in pipelles as compared to D & C, but a 6.6% polyp was observed in the D & C procedure.

Conclusion: Endometrial biopsy with pipelle as an outpatient procedure is safe and minimally invasive with the least chance of perforation and infection. Hence, pipelle is preferred than D & C method in abnormal uterine bleeding.

Keywords: Pipelle, D & C Perforation, Infection, Abnormal Uterine Bleeding, Peri And Post-Menopausal.

Introduction

Abnormal uterine bleeding is a major gynecological problem, accounting for 33% of outpatient referrals, including 69% of referrals in the perimenopausal and postmenopausal age groups [1]. Evaluation of the abnormal uterine bleeding in women >40 years or menopausal women is of critical importance to confirm the benign nature of the problem and to exclude endometrial carcinoma so that medical or conservative treatment can be offered and unnecessary radical surgery can be avoided [2].

Dilation and curettage (D & C) is the gold standard for endometrial sampling, but in 60% of cases, half of the uterine cavity is curetted, with the added risk of general anesthesia, infection, and perforation [3].

This has led to the advent of new and simple methods for endometrial sampling. Various devices are available in the market nowadays, including the pipelle device [4]. The pipelle device can be used on an outpatient basis and is cost-effective as compared with D & C. However, there are still concerns regarding the adequacy of the sample obtained and the non-sampling of focal intrauterine lesions. Hence, an attempt was made to evaluate and compare pipelle endometrial sampling with conventional D & C in patients with abnormal bleeding.

Material and Method

90 (ninety) patients aged over 40 years with abnormal bleeding admitted to the obstetrics and gynecology department, Shri Siddhi Vinayak Medical College and Hospital, Sambhal, Uttar Pradesh-462277, were studied.

Inclusion Criteria: Patients above 40 years of age, patients with or without medical disorders with abnormal uterine bleeding, and patients who gave their consent in writing for the study were selected.

Exclusion Criteria: Patients with pelvic inflammatory disease (PID), pregnancy, a history

of contraception, carcinoma of the cervix, or endometrial thickness <4 mm were excluded from the study.

Study tool: Case sheet proforma

Instruments: 1 – Sims speculum, 2 – Vulsellum, 3 – Uterine sound, 4 – Pipelle curette, 5 – Hegar's dilators, 6 – Endometrial biopsy curette, 7 – Sponge holding forceps, 8 – Betadine, 9 – 10% formaline.

Methodology: Detailed clinical assessment, including general physical examination, pelvic examination of patient and basic investigations, and ultrasound of the abdomen and pelvis, was performed. Endometrial sampling was performed by the pipelle device.

The patient was transferred to the operative table, and a pipelle was introduced without performing cervical dilatation and was drawn outside the uterus with a rotatory movement to get the sample, which was labeled as sample A. Then dilatation and curettage (D & C) was done under regional anesthesia, and the obtained sample after D & C was labeled as sample B. Both samples were sent to a pathologist.

The histopathology reports of the pipelle were compared with that of the D & C sample, and the D & C report was considered the gold standard method.

The duration of the study was from November 2024 to October 2025.

Statistical Analysis: Both A and B were compared with percentage and mean value of characteristics of patient demography. The statistical analysis was carried out using SPSS software.

Observation and Results

Table 1: Study of Adequacy in pipelle –

- 79 (87.7%) adequate, 10 (11.1%) scanty, 1 (1.11%) not obtained

Table 2: Study of Adequacy in D & C –

- 79 (87.7%) adequate, 8 (8.8%) scanty, 3 (3.3%) not obtained

Table 3: Characteristic of the patient –

- Age (in years): 43.6 (± 5.2)
- Duration of flow: 9.7 (± 2.4).
- Age of menarche (in years): 13.8 (± 0.5)
- Parity: 2.8 (± 0.66)
- Endometrial thickness (mm): 7.3 (± 1.0)
- Age of marriage (in years): 26.5 (± 1.4)

Table 4: Comparison of HPE results obtained by convertional D & C, and pipelle device –

- Proliferative endometrium: 38 (42.2%) in pipelle device, 32 (35.5%) in D & C.
- Secretory edomentrium: 26 (28.8%) in pipelle, 24 (26.6%) in D & C.

Table 1: Study of Adequacy in pipelle

Adequacy in pipelle	No. of patients (90)	Percentage (%)
Adequate	79	87.7
Scanty	10	11.1
Not obtained	1	1.11
Total	90	100

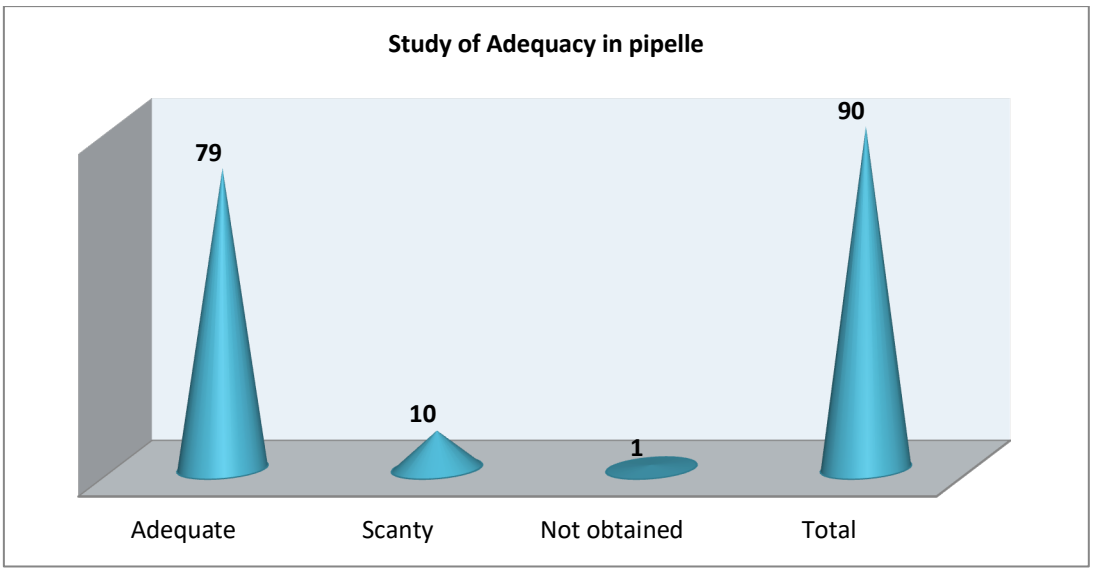

Figure 1: Study of Adequacy in pipelle

Table 2: Study of Adequacy in D & C

Adequacy in D & C	No. of patients (90)	Percentage (%)
Adequate	79	87.7
Scanty	8	8.8
Not obtained	3	3.3
Total	90	100

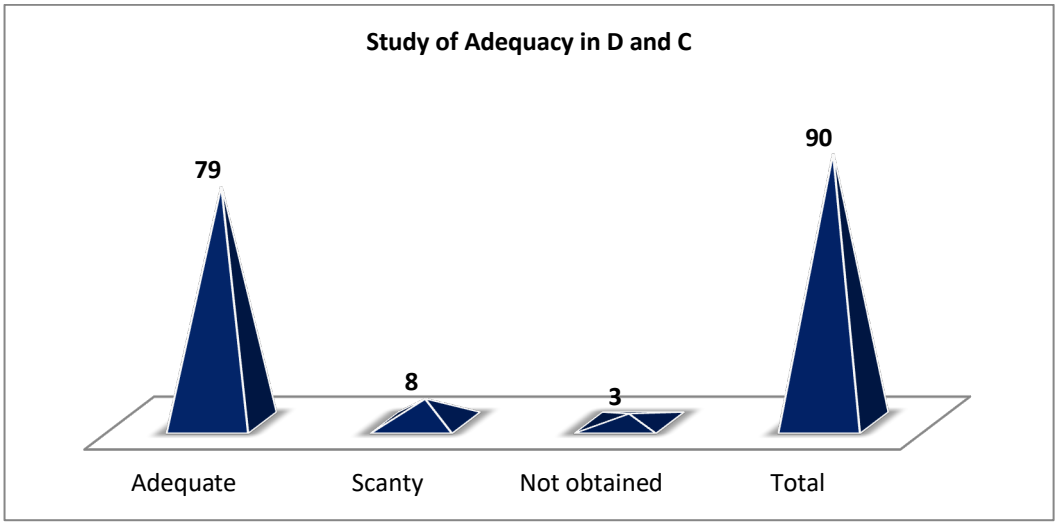

Figure 2: Study of Adequacy in D and C

Table 3: Characteristics of patients

Characteristics	Mean (± SD)
Age (in years)	43.6 (± 5.2)
Duration of flow (in days)	9.7 (± 2.4)
Age of Menarche (in years)	13.8 (± 0.5)
Parity	2.8 (± 0.66)
Endometrial thickness (in mm)	7.3 (± 1.0)
Age of marriage (in years)	26.5 (± 1.4)

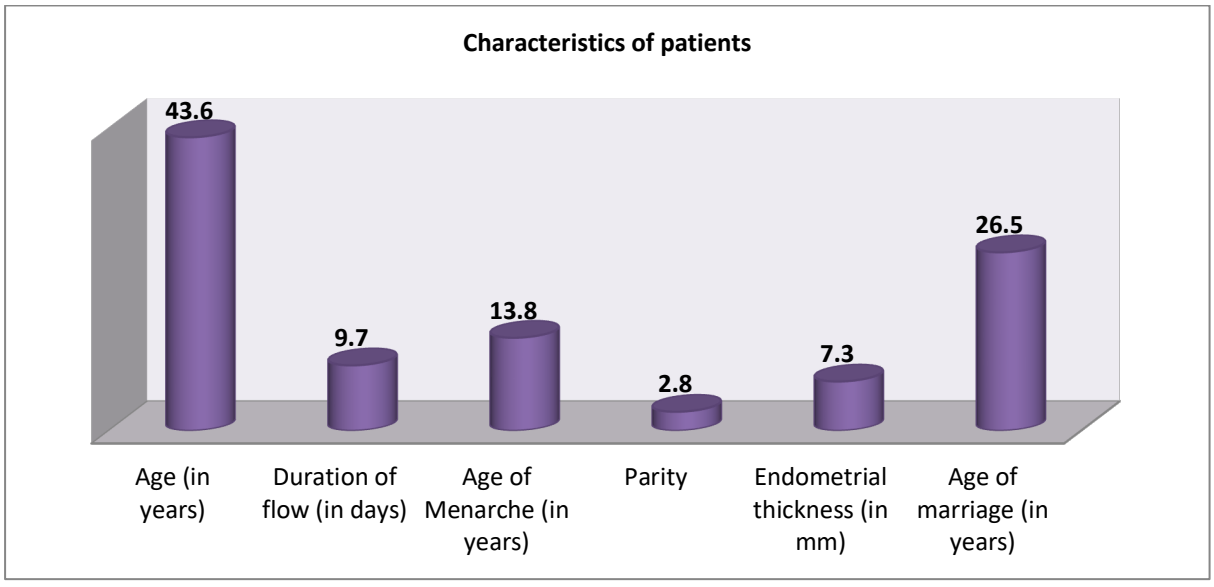

Figure 3: Characteristics of patients

Table 4: Comparison of HPE results obtained by conventional D & C and pipelle device

HPE report	Pipelle	D & C
Proliferative Endometrium	38 (42.2%)	32 (35.5%)
Secretory Endometrium	26 (28.8%)	24 (26.6%)
Disordered Endometrium	14 (15.5%0	16 (17.7%)
Adenocarcinoma	4 (4.4%)	4 (4.4%)
HJyper plasia with atypia	4 (4.4%)	6 (6.6%)
Polyp	0	6 (6.6%)
No report (sample was not obtained)	4 (4.4%)	2 (2.2%)

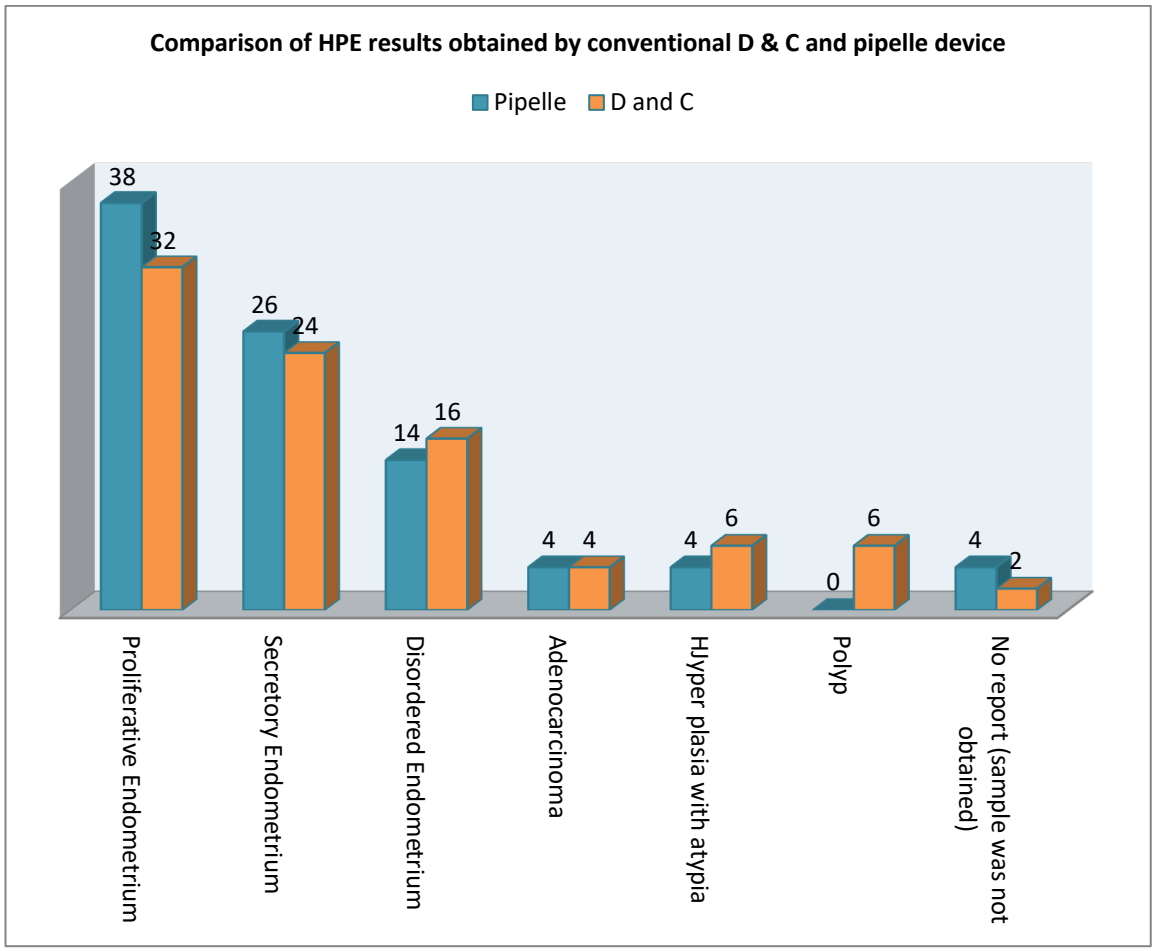

Figure 4: Comparison of HPE results obtained by conventional D & C and pipelle device

Discussion

Present a comparative study of pipelle endometrial sampling versus D & C in women with abnormal bleeding in the Uttar Pradesh population. The study of adequacy was 79 (87.7%) in both the pipelle and D & C method. Scanty was 10 (11.1%) in the pipelle and 8 (8.8%) in the D & C method (Tables 1 and 2). In the demographic study, the age of the patient was 43.6 (± 5.2), duration of flow was 9.7 (± 2.4), age of menarche (in years) was 13.8 (± 0.5), age of marriage (in years) was 26.5 (± 1.4), parity was 2.8 (± 0.66), and endometrial thickness was 7.3 (± 1.0) (Table 3). The rate of proliferative endometrium and secretory endometrium was higher in pipelle method 4 (4.4%), and adenocarcinoma observed in both techniques. Hyperplasia with atypia 4 (4.4%) in pipelle and 6 (6.6%) in D & C, 6 (6.6%) polyp is observed only in D & C approach (Table 4). These findings are more or less in agreement with previous studies [5,6,7]. The evaluation of abnormal bleeding begins with a history, physical examination, and pelvic examination, which includes cervical cytology of the ectocervix and the endocervical canal. Although medical history is not specific enough to make a firm diagnosis for AUB. Some questions assist in further narrowing the diagnostic possibilities in context to women's health considerations; age, weight, previous menstrual patterns, and medical problems play a vital role in the diagnosis of AUB [8]. Endometrial biopsy is an important step in the assessment of abnormal uterine bleeding to rule out so that conservative

surgery can be offered and unnecessary radical surgery can be avoided. Various methods of endometrial sampling are used in practice, including invasive and noninvasive on an inpatient or outpatient basis [9].

As the D & C method is outdated due to its risk factors, many instruments have been devised for the sampling of endometrial tissue and evaluation of the endometrial cavity. In 1882, Moriche obtained the first endometrial sample using a catheter, and endometrial biopsy has been performed on an outpatient. In 1970 there was an introduction of the Vabra curette, followed by the pipelle sampler in the 1980s.

The Vabra aspirator has been used extensively over the past 20 years. This disposable device requires an external vacuum source, usually an electric pump, which can be quite noisy and startling to the patient [10].

The pipelle has become one of the most popular new devices because it requires little expertise and can be used by anyone experienced in sounding the uterus [11]. Developed by Cornier, it was originally employed for endometrial sampling in fertility studies, but its usefulness in the diagnosis of pathological lesions was soon realized.

The pipelle curette offers two advantages. [1] It can traverse most cervical canals without prior dilatation or use of a vulsellum, and [2] it is generally well tolerated without analgesia [12].

Summary and Conclusion

Endometrial sampling using a pipelle device is an easy and safe method of getting tissue for diagnosis, which can be done as an outpatient procedure. Pipelle is cost-effective and has better patient compliance. Such study must be carried out on a large number of patients to confirm the present study findings because there is insufficient high-quality evidence regarding the diagnostic accuracy of other endometrial sampling tests.

Limitation of study: Owing to remote location of research centre, small number of patients and lack of latest techniques, we have limited finding and results.

This research work was approved by the ethical committee of Shri Siddhi Vinayak Medical College and Hospital Sambhal, Uttar Pradesh-462277.

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