

DIAGNOSTIC CURETTAGE IN PATIENTS WITH UTERINE ANATOMICAL ANOMALIES

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Abstract: The uterus, a vital organ of the female reproductive system, is situated within the pelvic cavity. Accurate knowledge of the uterine size and positioning plays a critical role in establishing precise diagnoses. Contemporary methods for obtaining biomaterial from the uterine body prioritize key factors such as the organ's dimensions, spatial orientation, and the condition of adjacent structures, whether they are full or vacant.

Keywords: menopause, menorrhagia, curettage, Pipelle, biopsy, histology, anomaly, biomaterial.

In some women, the uterus may be positioned in retroversion or retroflexion (tilted or bent backward) or situated centrally. When the uterus is in a retroversion/retroflexion position, it can lead to lower abdominal pain, infertility, and difficulties in performing various uterine procedures, such as curettage. Additionally, it may cause discomfort when using certain tampons or administering medications. In a non-pregnant woman of reproductive age, the approximate dimensions of the uterus are 8 cm in length, 4 cm in width, and 5 cm in depth. However, these dimensions are influenced by individual characteristics and vary significantly during prepubertal and postmenopausal stages [1,2]. In patients with a smaller uterus, obtaining biomaterial via curettage can be highly painful and often presents considerable challenges in diagnostics. Typically, the uterus is positioned in anteversion (tilted anterosuperiorly relative to the vaginal axis) and anteflexion (bent forward relative to the cervix, forming a flexion angle). Consequently, it rests above the urinary bladder. When

the bladder is empty, the uterus lies nearly in a transverse plane. However, its position can vary depending on the degree of fullness of the bladder and rectum, as well as the gestational age during pregnancy. [3,7,8].

Additionally, obstructive anomalies of the uterus, such as a septate uterus, can be cited as an example. In such cases, a connective tissue septum is present within the uterine cavity, extending to varying lengths and sometimes reaching as far as the cervix. This results in the formation of two separate cavities within the uterus. Endometrial malignancies may be confined to one cavity or involve both, making it advisable to obtain biopsies from both cavities in cases of suspected endometrial pathology. Endometrial atypical hyperplasia and carcinoma are often focal processes and may be localized to a single horn in cases of bicornuate or septate uteri. When endometrial biopsies are performed using non-visual, uncontrolled methods, there is a risk of obtaining samples from the unaffected uterine cavity, leading to false-negative results. Such outcomes can delay the diagnosis and treatment of the disease, thereby impacting patient management.

This issue can be addressed by utilizing the Pipelle biopsy method or performing Pipelle biopsy under ultrasound guidance [5,7,8]. During a woman's reproductive years, the endometrial layer of the uterus undergoes cyclical histological changes. The menstrual cycle typically begins between the ages of 12 and 15 and continues until approximately 45 to 50 years of age. The primary function of the endometrial layer is to prepare for the implantation of a fertilized ovum, participate in the implantation process, and contribute to the formation of the maternal portion of the placenta [1,6].

Research Findings: In the course of this study, biomaterial was collected from the uterine body of patients referred to the Tashkent City Branch of the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology between 2021 and 2023, with suspected uterine cancer. Among the 244 patients included in the study, a combined diagnostic approach was employed in 100 cases from the II control and III main groups. To enhance diagnostic accuracy, a combined method involving curettage under ultrasound guidance and the Pipelle endometrial sampling device was utilized for biomaterial collection. The results of these procedures were subsequently analyzed and summarized. The patient groups primarily consisted of those with enlarged uteri, as indicated by instrumental examination findings, as well as patients presenting with highly vascularized uteri characterized by numerous pathological blood vessels and high intensity. Additionally, patients with anatomical anomalies, such as bicornuate uteri, were included in the study.

Table 1.

Patient groups in which the Pipelle-biopsy procedure was applied

Symptoms		General patient groups	Patients who underwent the Pipelle biopsy procedure
Nulliparous women	number	44	42
	M±m%	18,1±2,24%	95,5±9,56%*

Women who underwent cauterization of the cervix	number	59	55
	M±m%	24,2±3,48%	93,2±10,67%*
Women with a closed cervix	number	46	43
	M±m%	18,9±1,95%	93,5±9,78%*
Women who have undergone cesarean section	number	74	51
	M±m%	30,3±4,55%	68,9±6,55%^
Women with an enlarged uterus as observed in ultrasound imaging	number	168	90
	M±m%	68,9±7,69%	53,6±5,48%
Women who experienced severe pain during a previous curettage procedure	number	67	45
	M±m%	27,5±3,71%	67,2±5,99%^
Women who experienced severe complications following a previous curettage procedure	number	59	43
	M±m%	24,2±2,49%	72,9±6,42%^
Women with a history of diagnosed endometriosis or adenomyosis	number	68	48
	M±m%	27,9±2,79%	70,6±6,45%^
Women of reproductive age with infertility	number	38	38
	M±m%	15,6±1,69%	100,0±10,2%*
Women with uterine structural anomalies (bicornuate or septate uterus)	number	11	11
	M±m%	4,5±1,05%	100,0±10,36%*
Women with a retroverted/retroflexed uterus	number	12	12
	M±m%	4,9±1,01%	100,0±17,8%*

Note: Statistically significant differences relative to the total number of patients * - $P<0,001$; ^ - $P<0,05$.

In cases where traditional curettage methods hindered biopsy collection, the Pipelle endometrial sampling technique was applied as the optimal method.

The Pipelle biopsy method was used for endometrial sampling as the preferred technique in 95.5±9.56% of nulliparous women, 93.2±10.67% of women who had undergone cauterization of the cervix due to erosive processes, and 93.5±9.78% of women with a closed cervix. This approach was chosen because, in these patients, obtaining a biopsy via curettage could be painful and uncomfortable due to difficulties in dilating the cervix. Furthermore, for women who had undergone cesarean section instead of natural childbirth, 68.9±6.55% of them underwent biopsy using this method due to similar complications in cervical dilation.

Furthermore, in 53.6±5.48% of women with enlarged uterine size, as observed in instrumental examinations, the Pipelle biopsy was performed due to the risk of uterine perforation during curettage. Similarly, the Pipelle biopsy technique was applied in 67.2±5.99% of women who experienced severe pain during a previous curettage procedure or in 72.9±6.42% of women who had developed significant complications following a prior curettage.

In women with a history of endometriosis or adenomyosis (70.6±6.45%) ($P<0.05$) and in nulliparous women of reproductive age (100.0±10.2%), the Pipelle biopsy was used as the preferred method, as curettage could lead to potential complications due to possible damage to the uterine cavity. Additionally, in women with uterine structural anomalies (bicornuate

or septate uterus) or those with a retroverted/retroflexed uterus, the Pipelle biopsy was employed in $100.0 \pm 17.8\%$ of cases, considering both the risk of uterine perforation and the need for accurate sample collection ($P < 0.001$) (see Table 1).

During our study, one of the most common complaints encountered during biopsy collection was pain. The intensity and manifestation of pain were assessed using a pain scale, with the pain expressed in numerical values. A 5-point scale was used, where a score of 5 indicated no pain, 4 represented mild and tolerable pain, 3 indicated moderate pain, and scores of 1-2 represented severe pain, leading to a deterioration in the patient's condition.

Table 2.

The quantification of pain perception using a numerical scale

Group	Score (5-point scale)
Observation (n=100)	Group 1 (Curettage)
	Group 2 (Ultrasound-guided Curettage)
Main (n=94)	Group 3 (Pipelle with Ultrasound guidance)
	Group 4 (Pipelle)

Note: Statistically significant differences compared to the results of Group 1. (*- $P < 0,05$)

As shown in the table, in Groups 1 and 2, the perception of strong and very strong pain, which even led to a deterioration in the patient's condition, was 3.32 ± 0.13 and 2.62 ± 0.11 , respectively ($P < 0.05$). In contrast, in the main group, the pain scores were 4.95 ± 0.55 and 4.92 ± 0.71 , indicating that the patients experienced no pain at all or only mild, tolerable pain ($P < 0.05$) (see Table 2).

Conclusion: It can be stated that the most optimal and minimally invasive method for patients with uterine anatomical anomalies is the Pipelle-assisted endometrial biopsy technique. Failure to diagnose and treat abnormal uterine bleeding in a timely manner increases the risk of developing various uterine gynecological disorders and uterine cancer.

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