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Diagnosis and selection of treatment methods for endometrial polyps in reproductive and postmenopausal women

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Endometrial polyps are common focal endometrial lesions that may be asymptomatic or associated with abnormal uterine bleeding, pelvic discomfort, and impaired reproductive function. Timely diagnosis is important to plan appropriate management.

Aim – to assess the clinical and morphological characteristics and management outcomes of endometrial polyps in reproductive and postmenopausal women.

Materials and methods. The study was conducted in 2024–2025 and included 68 women aged 35–55 years with morphologically confirmed endometrial polyps. Clinical symptoms, reproductive history, menopausal status, polyp number and size, associated gynecological and somatic factors, and treatment outcomes were evaluated. Diagnosis was based on transvaginal ultrasonography, sonohysterography, and hysteroscopy with targeted biopsy. Twenty-eight patients received hormonal therapy, and 40 were initially managed expectantly.

Results. Polyp regression occurred in 28/68 (41.2%) patients, more frequently with hormonal therapy than with expectant management (22/28 (78.6%) vs 6/40 (15.0%)). Patients with regression were younger, whereas body mass index and parity were not associated with outcome. Abnormal uterine bleeding occurred in 41/68 (60.0%), pain/discomfort in 23/68 (34.0%), and an asymptomatic course in 7/68 (10.3%). Single polyps predominated (49/68; 72.1%). Larger and multiple polyps tended to be more symptomatic, although differences by polyp number were not statistically significant. Hysteroscopic surgical techniques showed high reported clinical and ultrasound effectiveness (96.3–99.0%) without intraoperative complications; total endometrial resection required longer operating time.

Conclusion. Hormonal therapy was associated with a higher probability of polyp regression than expectant management. Hysteroscopy remains central to diagnosis and surgical treatment. Management should be individualized according to age, symptoms, reproductive plans, polyp characteristics, and comorbidities, with follow-up because recurrence may occur.

The study was conducted in accordance with the principles of the Declaration of Helsinki. Informed consent from women was obtained for the study. The author declares no conflict of interest.

Keywords: endometrial polyps, hysteroscopy, abnormal uterine bleeding, hormonal therapy, polypectomy, infertility, postmenopause.

Діагностика та вибір методів лікування поліпів ендометрію у жінок репродуктивного та постменопаузального періодів

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Поліпи ендометрію – це поширені вогнищеві ураження ендометрію, які можуть бути безсимптомними або пов'язаними з патологічною матковою кровотечею, тазовим дискомфортом та порушенням репродуктивної функції. Своєчасна діагностика важлива для планування відповідного лікування.

Мета – оцінити клінічні та морфологічні характеристики та результати лікування поліпів ендометрію в жінок репродуктивного та постменопаузального періоду.

Матеріали та методи. Дослідження проведено у 2024–2025 роках охопило 68 жінок віком 35–55 років із морфологічно підтвердженими поліпами ендометрію. Оцінено клінічні симптоми, репродуктивний анамнез, менопаузальний статус, кількість та розмір поліпів, супутні гінекологічні та соматичні фактори, а також результати лікування. Діагноз поставлено на основі трансвагінальної ультрасонографії, соногістерографії та гістероскопії з цілеспрямованою біопсією. 28 пацієнок отримували гормональну терапію, а 40 спочатку лікувалися вичікувальною терапією.

Результати. Регресія поліпів спостерігалася у 28/68 (41,2%) пацієнок, частіше при гормональній терапії, ніж при вичікувальній тактиці (22/28 (78,6%) проти 6/40 (15,0%)). Пацієнтки з регресією були молодшими, тоді як індекс маси тіла та кількість пологів не були пов'язані з результатом. Аномальна маткова кровотеча спостерігалася у 41/68 (60,0%), біль/дискомфорт – у 23/68 (34,0%), а безсимптомний перебіг – у 7/68 (10,3%). Переважали поодинокі поліпи (49/68; 72,1%). Більші та множинні поліпи мали тенденцію до більшої симптоматики, хоча відмінності за кількістю поліпів не були статистично значущими. Гістероскопічні хірургічні методи показали високу клінічну та ультразвукову ефективність (96,3–99,0%) без інтраопераційних ускладнень; тотальна резекція ендометрію вимагала тривалішого часу операції.

Висновок. Гормональна терапія була пов'язана з вищою ймовірністю регресії поліпів, ніж вичікувальне лікування. Гістероскопія залишається центральним елементом діагностики та хірургічного лікування. Лікування має бути індивідуалізованим відповідно до віку, симптомів, репродуктивних планів, характеристик поліпів та супутніх захворювань із подальшим спостереженням, оскільки можливий рецидив.

Дослідження проведено відповідно до принципів Гельсінської декларації. Для проведення дослідження було отримано інформовану згоду жінок. Автор заявляє про відсутність конфлікту інтересів.

Ключові слова: поліпи ендометрію, гістероскопія, патологічна маткова кровотеча, гормональна терапія, поліпектомія, безпліддя, постменопауза.

Introduction

Endometrial polyps are among the most common endometrial pathologies and represent an important issue in gynecology and reproductive medicine. Their prevalence ranges from 7.6% to 34.9%, depending on diagnostic methods and study populations [5,10]. A considerable proportion of polyps are asymptomatic, which complicates early diagnosis and may delay treatment with potential negative effects on reproductive function. Clinically, they are associated with abnormal uterine bleeding, pelvic pain, and infertility, increasing the risk of reproductive disorders by 2–3 times, particularly in women over 35 years of age [3,5,6].

Endometrial polyps are also considered a potential risk factor for endometrial hyperplasia and carcinoma, especially in the presence of hormonal and metabolic disturbances. Their impact on fertility is multifactorial, including mechanical interference with embryo implantation, alterations in the endometrial microenvironment, impaired blood supply, and subclinical inflammation [1,7,8]. Multiple and larger polyps are associated with a greater negative effect on reproductive outcomes.

Diagnosis is based on transvaginal ultrasound, sonohysterography, and hysteroscopy, which remains the gold standard as it allows both visualization and simultaneous removal of lesions. The combined diagnostic approach increases accuracy up to 94% [9]. Polyp removal prior to assisted reproductive technologies improves pregnancy rates, particularly in cases of polyps larger than 1.5 cm or multiple lesions [2,4,9].

Thus, endometrial polyps are clinically significant lesions, and their timely diagnosis and management are essential for improving reproductive outcomes and reducing infertility risk.

Aim: to assess the clinical and morphological characteristics and management outcomes of endometrial polyps in reproductive and postmenopausal women.

Materials and methods of the study

The study was conducted as part of a research program of the Department of Obstetrics and Gynecology II of the Azerbaijan Medical University during 2024–2025. The study (Main) group included 68 women aged 35–55 years with endometrial polyps confirmed morphologically after hysteroscopy. The mean age was 46.0 ± 1.7 years, mean body mass index (BMI) was 23.5 ± 3.4 kg/m², and 18 (26.5%) women were in the late postmenopausal period.

Inclusion criteria. Women aged 35–55 years with an endometrial polyp detected by pelvic ultrasonography and morphologically confirmed after hysteroscopy were eligible. Participants provided written informed consent and had no acute or exacerbated chronic somatic or gynecological disease at enrollment.

Exclusion criteria. Exclusion criteria were ovarian masses on ultrasonography; malignant tumors of the reproductive organs or other sites; hormonally active ovarian neoplasms; use of medications substantially affecting lipid or carbohydrate metabolism or weight-reduction agents; age <35 or >55 years; acute/exacerbated disease at enrollment; and refusal to participate.

Study methods. Clinical evaluation of patients included analysis of complaints, obstetric and gynecological, somatic history, and menstrual cycle characteristics. Transvaginal ultrasonography was used as the primary diagnostic method. To improve diagnostic accuracy, sonohysterography and office hysteroscopy with targeted endometrial biopsy were additionally employed.

Infertility was diagnosed according to World Health Organization (WHO) criteria as the absence of clinical pregnancy after 12 months of regular unprotected sexual intercourse (or 6 months in women over 35 years). Based on history, primary and secondary infertility were distinguished. Male factor infertility was excluded based on partner examination, including semen analysis. Tubal factor infertility was excluded using instrumental methods (hysterosalpingography, sonohysterosalpingoscopy) or based on clinical data and history.

Clinical evaluation included the assessment of demographic, anthropometric, gynecological, reproductive, clinical, and morphological characteristics. The following parameters were recorded for each patient: age, BMI, parity, reproductive status, menstrual status, history of inflammatory diseases of the uterus and adnexa, vaginal infections, medical abortions and/or use of intrauterine contraceptives, as well as concomitant somatic disorders.

Clinical manifestations of endometrial polyps were assessed based on patients' complaints and were classified as abnormal uterine bleeding, lower abdominal pain/discomfort, or an asymptomatic course.

The morphological characteristics of endometrial polyps were evaluated by transvaginal ultrasonography, sonohysterography, and hysteroscopy. The

Table 1

Clinical characteristics of patients of Main group according to outcome

Parameter	Total (n=68)	Persistent (n=40)	Regressed (n=28)	p-value
Age (years), M±m:	46.0±1.7	47.2±1.6	44.3±1.5	0.012
≤50, n (%)	54 (79.4)	30 (75.0)	24 (85.7)	0.28
>50, n (%)	14 (20.6)	10 (25.0)	4 (14.3)	0.28
BMI (kg/m ²), M±m:	23.5±3.4	23.7±3.2	23.2±3.5	0.56
<18.5, n (%)	3 (4.4)	2 (5.0)	1 (3.6%)	0.79
18.5–24, n (%)	31 (45.6)	18 (45.0)	13 (46.4)	0.84
24–27, n (%)	8 (11.8)	5 (12.5)	3 (10.7)	0.84
≥27, n (%)	12 (17.6)	7 (17.5)	5 (17.9)	0.94
Parity, M±m:	1.36±1.06	1.42±1.11	1.28±1.02	0.62
0, n (%)	18 (26.5)	10 (25.0)	8 (28.6)	0.74
≥1, n (%)	50 (73.5)	30 (75.0)	20 (71.4)	0.74
Hormonal therapy, n (%)	28 (41.2)	6 (15.0)	22 (78.6)	<0.001
Oral contraceptives, n (%)	15 (22.1)	5 (12.5)	10 (35.7)	0.03
Progestins, n (%)	5 (7.4)	4 (10.0)	1 (3.6)	0.36
Estrogen + progestin, n (%)	8 (11.8)	3 (7.5)	5 (17.9)	0.18
No treatment, n (%)	40 (58.8)	34 (85.0)	6 (21.4)	<0.001

number of polyps was classified as solitary or multiple. According to their maximum diameter, polyps were divided into three categories: <1 cm, 1–2 cm, and >2 cm. The relationship between polyp size and number and the presence of abnormal uterine bleeding, pain/discomfort, and an asymptomatic course was subsequently analyzed.

Reproductive status was evaluated from the obstetric and gynecological history. Infertility was defined according to WHO criteria as the absence of clinical pregnancy after 12 months of regular unprotected sexual intercourse, or after 6 months in women older than 35 years. Primary and secondary infertility were distinguished according to reproductive history. When infertility was present, male and tubal factors were excluded using partner semen analysis and appropriate instrumental assessment of tubal patency.

Treatment-related parameters included the management strategy, type of hormonal therapy, dynamics of endometrial polyps during follow-up, type of hysteroscopic intervention, duration of surgery, occurrence of intraoperative complications, and postoperative recurrence. Conservative management included hormonal therapy or expectant management. Hormonal treatment comprised oral contraceptives, progestins, or combined estrogen and progestin therapy. Treatment outcome was classified as

polyp regression or persistence according to follow-up ultrasound and/or hysteroscopic findings.

For surgically treated patients, the type of hysteroscopic intervention was recorded as mechanical removal, electromechanical removal, local electro-surgical resection, or total endometrial resection. Operative duration was measured in minutes. Surgical treatment effectiveness was assessed using clinical, ultrasound, and hysteroscopic criteria. A favorable treatment outcome was defined by the absence of abnormal uterine bleeding and the absence of sonographic or hysteroscopic evidence of residual or recurrent intrauterine pathology during follow-up.

Statistical analysis. Data were processed using Microsoft Excel 2010 (Microsoft, USA), Statistica 6.0 (StatSoft Inc., USA), and SPSS Statistics version 22.0 (IBM, USA). Quantitative variables with a normal distribution are presented as mean ± standard error of the mean (M±m). Categorical variables are presented as proportions with 95% confidence intervals (CI). The Chi-square (χ^2) test was used to assess differences in the frequency of characteristics between groups. Odds ratios (OR) with 95% CI were calculated for selected treatment comparisons. Differences were considered statistically significant at $p < 0.05$. The sample size was determined by the availability of eligible clinical material during the study period.

Table 2

Distribution of endometrial polyps by size, number, and clinical manifestations of patients of Main group (n=68), n (%)

Polyp size	Total (n)	Solitary	Multiple	Bleeding	Pain/Discomfort	Asymptomatic
<1 cm	16	12 (75.0)	4 (25.0)	5 (31.3)	3 (18.8)	8 (50.0)
1–2 cm	26	20 (76.9)	6 (23.1)	15 (57.7)	8 (30.8)	3 (11.5)
>2 cm	26	18 (69.2)	8 (30.8)	16 (61.5)	8 (30.8)	2 (7.7)

Table 3

Distribution of clinical manifestations of endometrial polyps in Main group (n=68) according to polyp type, n (%)

Polyp type	Number of patients	Abnormal uterine bleeding	Pain/discomfort	Asymptomatic course
Single polyps	49 (72.0)	28 (57.0)	15 (31.0)	6 (12.0)
Multiple polyps	19 (28.0)	13 (68.0)	8 (42.0)	1 (5.0)
Total	68 (100.0)	41 (60.0)	23 (34.0)	7 (10.0)

All participants provided written informed consent. The study was conducted in accordance with the Declaration of Helsinki (2013), and the study protocol was approved by the Local Ethics Committee of Azerbaijan Medical University.

Results of the study and discussion

A total of 68 women with endometrial polyps were included in the study. Of these, 28 (41.2%) patients received hormonal therapy, including progestins or combined oral contraceptives, while the remaining 40 (58.8%) patients were managed expectantly without pharmacological intervention.

Regression of endometrial polyps was observed in 28 (41.2%) patients, whereas persistence of polyps was noted in 40 (58.8%) cases.

A significantly higher rate of polyp regression was found in the hormonally treated group, where regression occurred in 22 (78.6%) out of 28 patients. In contrast, among patients managed expectantly, regression was observed in only 6 out of 40 (15.0%) cases. This difference was statistically significant ($p < 0.001$).

No statistically significant differences were found between groups in terms of BMI or parity ($p > 0.05$). However, patients with polyp regression were significantly younger compared to those with persistent polyps ($p = 0.012$). These findings indicate that hormonal therapy is strongly associated with regression of endometrial polyps and appears to be more effective than expectant management (Table 1).

The size of endometrial polyps ranged from 0.5 to 3.2 cm, with a mean diameter of 1.4 ± 0.6 cm. Polyps

larger than 2 cm were more frequently associated with abnormal uterine bleeding, whereas polyps smaller than 1 cm were more often asymptomatic and detected incidentally (Table 2).

In the analyzed cohort, solitary polyps predominated, occurring in 68–77% of patients depending on polyp size, while multiple polyps were observed in 23–32% of cases.

Smaller polyps (<1 cm) were asymptomatic in 50.0% of cases, whereas medium-sized (1–2 cm) and large polyps (>2 cm) were more frequently associated with abnormal uterine bleeding (57.7% and 59.1%, respectively).

Pain and discomfort were reported in 18.8–30.8% of patients, without statistically significant differences between groups ($p > 0.05$) (Table 2).

The clinical presentation of endometrial polyps among the examined women was highly heterogeneous. The most common manifestation in the cohort of 68 patients was abnormal uterine bleeding, which was observed in 41 (60.0%) women and had a substantial negative impact on quality of life. Pelvic pain and lower abdominal discomfort were reported by 23 (34.0%) patients, contributing to additional physical and psychological burden. At the same time, 6 (10.0%) women were completely asymptomatic, highlighting the latent nature of this pathology and the importance of thorough instrumental evaluation. Single endometrial polyps predominated in the study population, being detected in 49 (72.0%) patients, whereas multiple polyps were identified in 19 (28.0%) women, reflecting

Table 4

Clinical manifestations of endometrial polyps and concomitant factors in women of Main group (n=68), n (%)

Parameter	Total (n=68)	Single polyps (n=49)	Multiple polyps (n=19)	p (significance)
Abnormal uterine bleeding	41 (60.3)	28 (57.0)	13 (68.0)	0.37
Lower abdominal pain/discomfort	23 (33.8)	15 (31.0)	8 (42.0)	0.42
Asymptomatic course	7 (10.3)	6 (12.0)	1 (5.0)	0.51
Late postmenopausal age	18 (26.5)	13 (26.5)	5 (26.3)	0.98
Women without fertility disorders	65 (95.6)	47 (95.9)	18 (94.7)	0.79
History of inflammatory diseases of the uterus and adnexa	23 (33.8)	17 (34.7)	6 (31.6)	0.78
Vaginal infections	25 (36.8)	18 (36.7)	7 (36.8)	0.99
Medical abortions and/or use of intra-uterine contraceptives	57 (83.8)	41 (83.7)	16 (84.2)	0.93

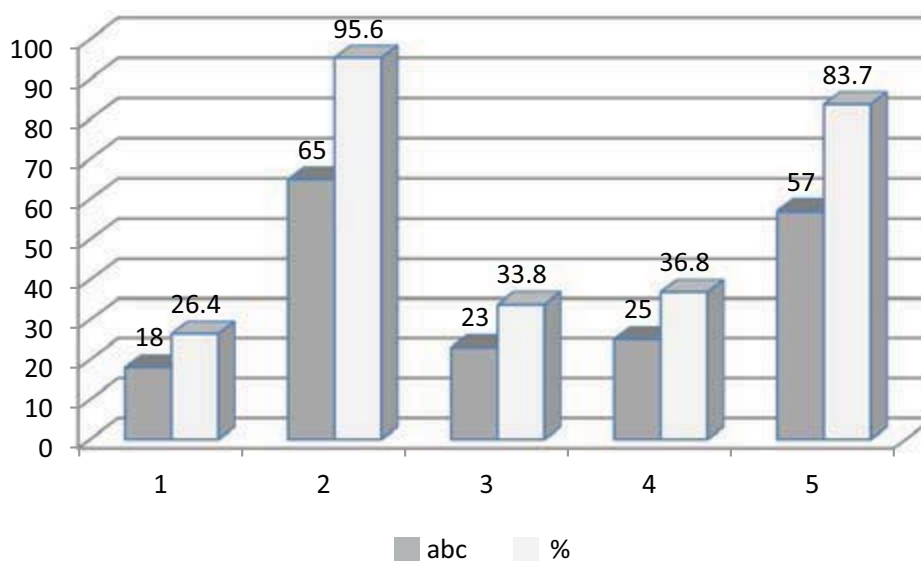
considerable morphological variability of the disease (Table 3).

Particular attention should be paid to asymptomatic cases: 6 (12%) women with single polyps and only 1 (5%) patient with multiple polyps reported no complaints, indicating the hidden risk of this pathology and the potential for delayed diagnosis without instrumental evaluation. Overall, the findings demonstrate that multiple polyps are associated with more pronounced clinical symptoms, whereas single polyps often remain silent but can still exert a significant negative impact on a woman's reproductive potential by creating mechanical, hormonal, and inflammatory barriers to embryo implantation and pregnancy. These results emphasize the need for

thorough endometrial assessment in women of reproductive age, especially in cases of infertility or menstrual disorders, with a focus on identifying multiple and large polyps for timely therapeutic intervention.

No significant differences were observed in ovarian reserve indicators or the frequency of endocrine disorders between patients with single and multiple polyps ($p > 0.05$). There was a tendency for increased clinical manifestations and reduced reproductive potential with advancing age; however, no statistically significant differences were found between the age groups ($p > 0.05$).

Analysis of the clinical data revealed that endometrial polyps were more commonly observed in wo-



Notes: 1 – age category: late postmenopausal period; 2 – women without fertility impairments; 3 – history of inflammatory diseases of the uterus and adnexa; 4 – vaginal infections; 5 – medical abortions and/or use of intrauterine contraceptives.

Fig. 1. Characteristics of concomitant factors in women with endometrial polyps (n=68)

Table 5

Association between management strategy and regression of endometrial polyps

Management strategy	Regression, n (%)	Persistence, n (%)	OR (95% CI)	p-value
Hormonal therapy	22 (78.6)	6 (21.4)	20.78 (5.94–72.69)	<0.001
Expectant management	6 (15.0)	34 (85.0)	1.00 (reference)	—

men in the late postmenopausal period – 18 (26.4%) patients fell into this age category. Interestingly, polyps were predominantly detected in women without fertility impairments – 65 (95.3%) of those examined. More than one-third of the women had a history of inflammatory diseases of the uterus and adnexa, and 25 (36.8%) patients had vaginal infections. The frequency of medical abortions and intrauterine contraceptive use was high – 57 (83.7%), suggesting a potential influence of prior interventions on endometrial morphology (Fig. 1).

Table 4 shows that among the 68 women examined, single polyps predominated – 49 (72%); however, multiple polyps were associated with more pronounced clinical manifestations: abnormal uterine bleeding was observed in 13 (68%) of patients with multiple polyps versus 28 (57%) in those with single polyps, and pain/discomfort occurred in 8 (42%) versus 15 (31%), respectively. Asymptomatic cases were more frequent in women with single polyps. Late postmenopausal age, a history of inflammatory diseases, vaginal infections, medical abortions, and the use of intrauterine contraceptives were observed with high frequency, in-

dicating a significant influence of concomitant factors on endometrial status. Despite apparent differences in clinical manifestations, no statistically significant differences were found between groups ($p>0.05$), highlighting the need for a comprehensive and individualized approach when assessing the risk of reproductive disorders in women with endometrial polyps.

The size of the polyps ranged from less than 1 cm to more than 2 cm (Fig. 2).

Smaller polyps were more often asymptomatic, whereas medium and large polyps were associated with abnormal uterine bleeding. Multiple polyps were accompanied by more frequent bleeding and pain, although differences between groups did not reach statistical significance. Among women with infertility, the prevalence of polyps was 25.9%, with a mean age of 44.6 ± 2.1 year, which did not differ significantly from women without infertility (46.3 ± 1.5 years). Women with multiple polyps had a slightly higher risk of infertility compared to those with single polyps, suggesting a potential dose-dependent relationship between the number of polyps and impaired reproductive function.

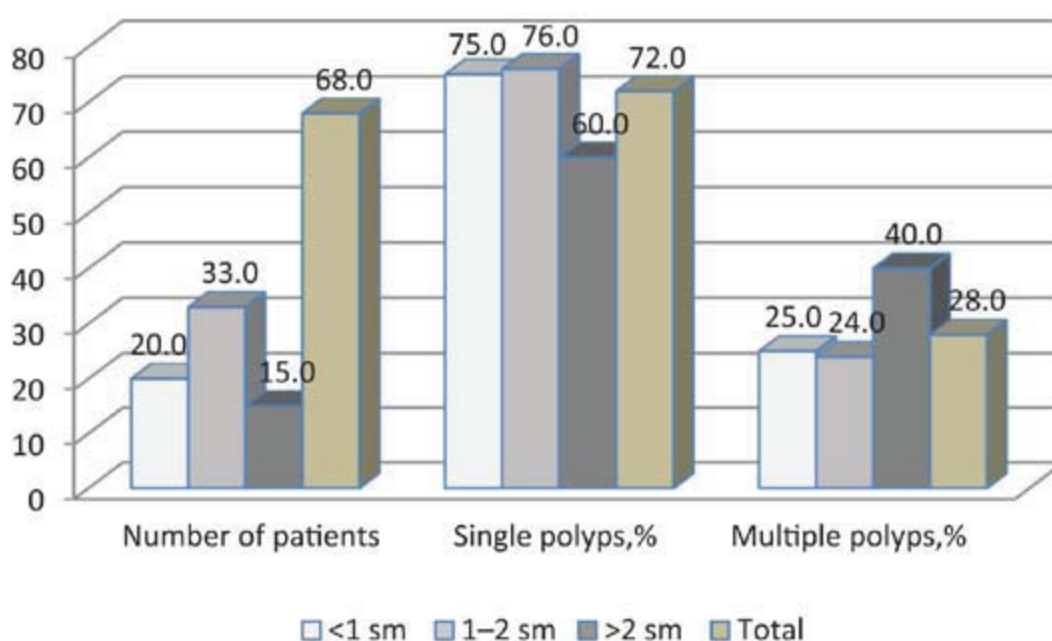


Fig. 2. Distribution of endometrial polyps by size and type (single and multiple) in patients of the Main group (n=68)

Table 6

Duration of polypectomy depending on the surgical method used

Polyp size	Operation duration, min			
	Mechanical removal	Electromechanical removal	Local resection	Total resection
EP (2–10 mm)	17±2.2	-	16±2.1	28±2.8*
EP (10–20 mm)	18±2.4	15±2.0	17±2.2	30±2.8*
EP (20–65 mm)	22±2.6	16±2.1	17±2.2	34±2.9*

Note: * – statistically significant increase in the duration of total endometrial resection compared to local removal of the pathological focus ($p < 0.05$).

Analysis of treatment efficacy demonstrated a significantly higher rate of endometrial polyp regression in patients receiving hormonal therapy compared with those managed expectantly (78.6% [22 out of 28] vs. 15.0% [6 out of 40], respectively; $p < 0.001$). Hormonal therapy was associated with markedly increased odds of polyp regression compared with expectant management (OR=20.78; 95% CI: 5.94–72.69). Thus, regression was observed in 28 of 68 patients (41.2%), whereas persistence of endometrial polyps was recorded in 40 patients (58.8%). (Table 5)

Transvaginal ultrasound is the primary non-invasive method for initial diagnosis of intrauterine pathology in postmenopausal patients. It allows detection of pathological formations, their size, location, and endometrial echostructure, which is important for selecting the method of further treatment. Figure 3 shows a typical ultrasound image of a solitary endometrial polyp detected in a patient, demonstrating a solid formation with clear contours and a homogeneous structure, consistent with a benign nature. This image illustrates the possibility of timely polyp

detection and planning organ-preserving intrauterine intervention (Figure 3).

Transvaginal ultrasound showed an endometrium 10 mm thick with a three-layer structure corresponding to the proliferative phase. A polyp measuring 11.5×6.1 mm was visualized in the middle third of the uterine cavity from the anterior wall.

Since all 68 patients in our study had endometrial polyps, it was considered appropriate to evaluate the commonly used parameters for performing surgery in this patient group. All intraoperative characteristics were within acceptable ranges, and no complications occurred during the operations in any of the patients. Evaluating the duration of surgery for all methods used, we found that the time required for polypectomy ranged from 16 to 34 minutes and was significantly longer in patients who underwent total electrosurgical endometrial resection. The duration of polypectomy according to the surgical method used is presented in Table 6.

Patients were discharged on the 2nd day after surgery in satisfactory condition and were able to immediately resume their usual daily activities. For pro-



Fig. 3. Transvaginal ultrasound. Ultrasound image of an endometrial polyp measuring 11.5×6.1 mm, visualized in the middle third of the uterine cavity from the anterior wall

Table 7

Clinical and ultrasound effectiveness of hysteroscopic treatment methods

Surgical method	Effectiveness, %	Criteria
Mechanical removal	96.3	Absence of vaginal bleeding + no ultrasound signs of persistent/recurrent hyperplastic pathology
Electromechanical removal	96.5	Same composite criteria
Local electrosurgical resection	97.4	Same composite criteria
Total electrosurgical resection	99.0	Same composite criteria

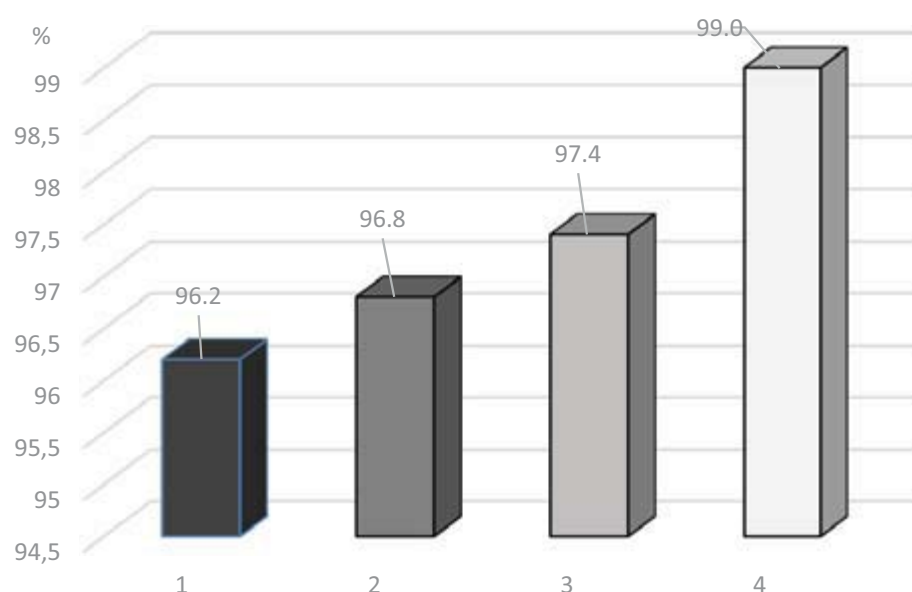
phylactic purposes, all patients received outpatient antibacterial, anti-inflammatory, and desensitizing therapy during the first 5 days after the procedure.

After obtaining histological results, hormonal therapy with progestins (Norethisterone) in mandatory combination with acetylsalicylic acid was recommended for patients who underwent mechanical or electromechanical removal of endometrial polyps with glandular histology, as well as for patients with endometrial hyperplasia without atypia. The therapy was administered continuously for 6 months to prevent recurrence of intrauterine pathology.

Treatment effectiveness was assessed comprehensively using clinical, hysteroscopic, and ultrasound criteria. Clinical criteria included the absence of vaginal bleeding, while ultrasound criteria involved M-echo indicators showing no evidence of hyperplastic pathological processes. The effectiveness of all applied methods was high (Figure 4).

The effectiveness of mechanical removal of the pathological focus was 96.3%, electromechanical removal – 96.5%, local electrosurgical endometrial resection – 97.4%, and total electrosurgical endometrial resection – 99.0%. The reported overall effectiveness of the applied hysteroscopic techniques ranged from 96.3% to 99.0% (Table 7).

Indications for the use of organ-preserving intrauterine surgical methods are determined by the nature of the intrauterine pathology. Electrosurgical and mechanical removal of intrauterine pathological formations under hysteroscopic control is indicated for benign uterine cavity diseases in postmenopausal patients. For large endometrial polyps, the method of choice is electromechanical morcellation. Organ-preserving intrauterine surgical methods are contraindicated in cases of endometrial hyperplasia (with or without atypia) as well as in endometrial adenocarcinoma.



Notes: 1 – mechanical removal of the pathological focus; 2 – electromechanical removal of the pathological focus; 3 – local resection; 4 – total resection.

Fig. 4. Effectiveness of the applied treatment methods for benign intrauterine pathologies in postmenopause

Clinical recommendations

1. Women with infertility should undergo comprehensive evaluation of the endometrium, including transvaginal ultrasonography, sonohysterography, and, if indicated, office hysteroscopy.

2. Hysteroscopy polypectomy is recommended for patients with endometrial polyps, especially in cases of multiple polyps, large polyps, or abnormal uterine bleeding, to improve reproductive outcomes.

3. Management should include individualized assessment of risk factors, clinical manifestations, and comorbidities to determine the optimal treatment strategy.

4. Further follow-up and research are necessary to evaluate the long-term impact of polyp removal on pregnancy outcomes, particularly in women with infertility.

The principal finding of this study was the substantially higher frequency of polyp regression among women receiving hormonal therapy than among those managed expectantly (78.6% vs 15.0%). This observation supports a potential role for conservative hormonal management in selected patients, while the small treatment subgroups and non-randomized design limit conclusions regarding superiority of individual regimens. Current evidence-based guidance emphasizes individualized management according to symptoms, malignancy risk, reproductive plans, and polyp characteristics [10].

Abnormal uterine bleeding was the most frequent clinical manifestation, whereas approximately one in ten patients was asymptomatic. This heterogeneity is consistent with the established clinical spectrum of endometrial polyps [1,8]. In our cohort, larger and multiple polyps tended to be associated with more bleeding and pain, but differences according to polyp number did not reach statistical significance. Therefore, morphology should be interpreted together with symptoms rather than used as an isolated indication for intervention.

The association between endometrial polyps and infertility remains biologically plausible through mechanical interference with implantation and altered endometrial receptivity [5,7]. However, only a small proportion of the present cohort had documented fertility disorders, so the study was not powered to establish an independent effect of polyp number on infertility. Statements regarding reproductive impact should therefore be regarded as exploratory.

Hysteroscopy was used for direct visualization, targeted biopsy, and surgical treatment. The high reported effectiveness of hysteroscopic techniques and absence of intraoperative complications in this cohort are consistent with the role of hysteroscopy as the reference diagnostic and therapeutic approach [8,10]. Total endometrial resection required longer operating time than local removal, underscoring the need to select the least extensive effective procedure for the individual clinical situation.

Recurrence after polypectomy remains clinically relevant and has been linked to patient- and lesion-related factors in recent studies [4]. In the present study, recurrence was observed during follow-up, supporting continued surveillance after treatment. Limitations include the single-center design, modest sample size, absence of a randomized treatment allocation, and incomplete subgroup sizes for some surgical and hormonal comparisons. These limitations should be considered when generalizing the findings.

Conclusion

Endometrial polyps are a common intrauterine pathology with significant clinical relevance in both reproductive and postmenopausal women. The present study demonstrates that hormonal therapy is associated with a markedly higher rate of polyp regression compared with expectant management, indicating its potential effectiveness in selected patients.

Clinical presentation is variable, with abnormal uterine bleeding being the most frequent symptom, while a considerable proportion of cases remain asymptomatic. Multiple and larger polyps tend to be associated with more pronounced symptoms and a higher risk of reproductive dysfunction, although not all differences reach statistical significance.

Transvaginal ultrasound, sonohysterography, and hysteroscopy provide high diagnostic accuracy, with hysteroscopy remaining the gold standard due to its simultaneous diagnostic and therapeutic capabilities. Surgical treatment methods, particularly organ-preserving hysteroscopic techniques, demonstrate high effectiveness and safety with minimal complication rates.

Overall, early diagnosis and individualized management of endometrial polyps are essential for improving clinical outcomes, reducing recurrence risk, and optimizing reproductive potential in affected women.

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