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Minimally Invasive Surgery Management Treatment in Patients with atypical Endometrial Hyperplasia and Early Stage Endometrial Cancer

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Abstract

During the period from 2018 to 2020, hysteroresectoscopy was performed on 87 patients of late reproductive, pre- and postmenopausal age. The entire scope of examination, treatment and follow-up of patients before and after ablation was performed in the conditions of the NOVAMED Polyvalent Hospital. Indications for endometrial ablation are benign endometrial diseases, precancer and initial cancer of the uterine body (stage Ia) in patients of pre- and postmenopausal age with ineffectiveness, resistance, or contraindications to hormone therapy or radical surgical treatment due to pronounced extragenital. The results of the study allow us to recommend endometrial ablation as an alternative to classical methods of treatment (hormone therapy and extirpation of the uterus with appendages) in patients with atypical hyperplasia and initial endometrial cancer (Ia stage)

Key words: Endometrial cancer • Hysteroresectoscopy • Minimally invasive surgery • Atypical hyperplasia

Introduction

The increase in the incidence of endometrial cancer dictates the need not only for early detection of this pathology, but also for appropriate treatment.

In the last decade in the Republic of Moldova, as in most countries of the world, there is a clear trend towards an increase in the incidence of endometrial cancer, from 13.7 cases in 2000 to 15.0 cases (per 100 thousand women) in 2019 [5]. At the same time, the early stages of the process predominate — I-II (64%), which today is a good and promising indicator that speaks of sufficient attention paid to early diagnosis [5].

Most often, cancer occurs in the context of precancerous changes of the endometrium, whose frequency of malignancy fluctuates in a fairly large range (23-57.1%) and is determined by the morphological characteristics of the disease, the frequency of its recurrence, the age the patient (pre- and postmenopause), as well as endocrine and metabolic disorders (obesity, diabetes, hypertension) [1].

The risk of malignancy of endometrial polyps and endometrial hyperplasia (glandular, glandulo-cystic, adenomatous), without morphological signs of cellular atypia, is 1-5%, which allows them to be attributed to background conditions, not precancerous. In this sense, the study of atypical hyperplasia and early-stage endometrial cancer is of the greatest interest [1].

Materials and Method

In the period 2018–2020, hysteroresectoscopy was performed on 87 patients of late reproductive age, pre- and postmenopausal. The entire range of investigations, treatment and observation of patients before and after ablation was provided under the conditions of the NOVAMED Multipurpose Hospital. Morphological examinations of the biopsy from the uterine cavity and of the operative parts were performed in the SYNEVO pathomorphological laboratory.

All patients were divided into two groups. The first group (the main group) included 75 patients with background changes – glandular hyperplasia and endometrial polyps. The second group consisted of 12 women who underwent electrosurgical endometrial ablation due to atypical hyperplasia (n=9) and early-stage endometrial cancer (n=3).

The average age of patients in the main group was 45.06 ± 1.23 years, in the second The aims of the study were:

1. Development of indications for endometrial ablation.
2. Development of preoperative preparation methods and determination of conditions for increasing the efficiency of endoscopic surgery in patients with atypical endometrial hyperplasia and endometrial cancer in early stage.
3. Analysis of the effectiveness of the destruction of the uterine mucosa by the plasma vaporization method.
4. Studying the morphological changes in the surgical parts, the depth of destruction in the endometrium and myometrium during plasma vaporization.
5. Determination of contraindications for endometrial ablation.
6. Evaluation of the immediate results of endometrial ablation as a treatment method for precancerous conditions and early stage endometrial cancer.

Result

A fundamentally new method of destroying the endometrium is plasma vaporization, which represents tissue evaporation under the action of plasma [11].

The procedure is carried out with the help of a bipolar electrode in cutting mode, using a special electrode - vaporotrod. The shape of the steam trode

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can be different, but it must combine a large work surface with sharp edges around the perimeter. This makes it possible to penetrate deeper into the tissue and, with adequate power, a deeper destruction of the endometrium. The technique of treating the inner surface of the uterus with a vaporotrode is the same as for coagulation, since the electrode is also a roller that can be moved successively along the surface. However, taking into account the ability of the vaporotrode to cause heating of the deep layers of the myometrium, the area of the tubal corners is treated with a ball electrode in coagulation mode (electrical power – 120 W) to prevent uterine perforation.

Endometrial ablation was performed in 12 patients with atypical hyperplasia (n=9) and early-stage endometrial cancer (n=3) by plasma vaporization of the endometrial tissue. Ball-shaped roller vaportrode was used for vaporization. Tissue resection was performed with an electric loop with a 90 degree tilt angle. Different vaporization effects were achieved not only by using different electrodes, but also due to the programmed output parameters of the electric generator. The variety of the endoscopic and morphological structure of the endometrium determined the use of electrosurgical ablation methods with different current strength and depth of destruction.

The hysteroscopic signs of atypical endometrial hyperplasia in the form of a thickened, unevenly folded surface of the uterine mucosa, with the presence of soft growths with irregular contours that spread into the openings of the fallopian tubes and with a pronounced vascular pattern, conditioned the predominant use of the coagulation technique that ensures the most uniform removal of the endometrium (Figure1).

Destruction of the endometrium by vaporization in resection mode and coagulation with a ball electrode at a current power of 80-120 W was performed in 12 patients with the following endometrial pathologies: 9 women with pronounced atypical endometrial hyperplasia and 3 women with endometrial cancer in early stage (IA) (Figure 2,3).

The duration of the operation in each case studied varied between 30 and 55 minutes. The time required for the destruction of the endometrium depended not only on the size of the spreading zone along the walls of the uterine cavity and, respectively, on the size of the treated surface, but also on the nature of the pathology of the endometrium, which also determined the speed of the electrode. The longest were the operations to destroy the unprepared endometrium. In the vast majority of cases, we are dealing with women with atypical endometrial hyperplasia (n=5) in whom preoperative intrauterine curettage was not performed. In such cases, the endometrium remained thick, folded, the openings of the fallopian tubes were often not visualized due to edema of the uterine mucosa, which required a longer electrosurgical treatment.

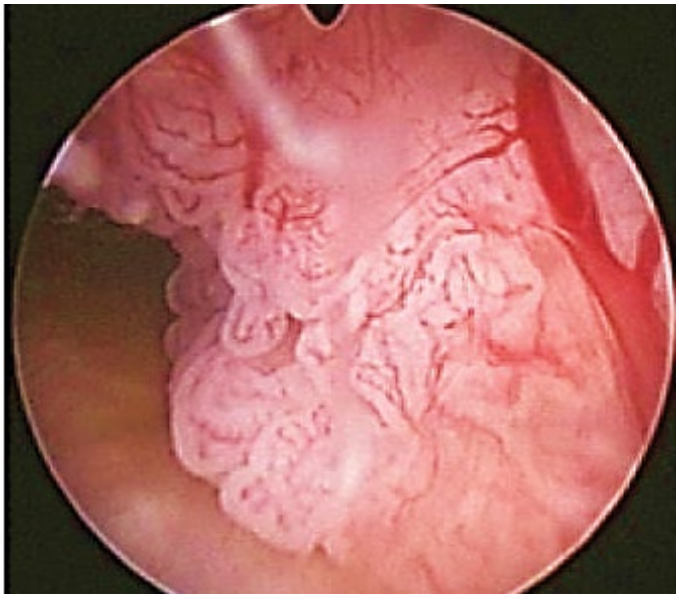

Figure 1: Endometrial carcinoma during histeroresectoscopy

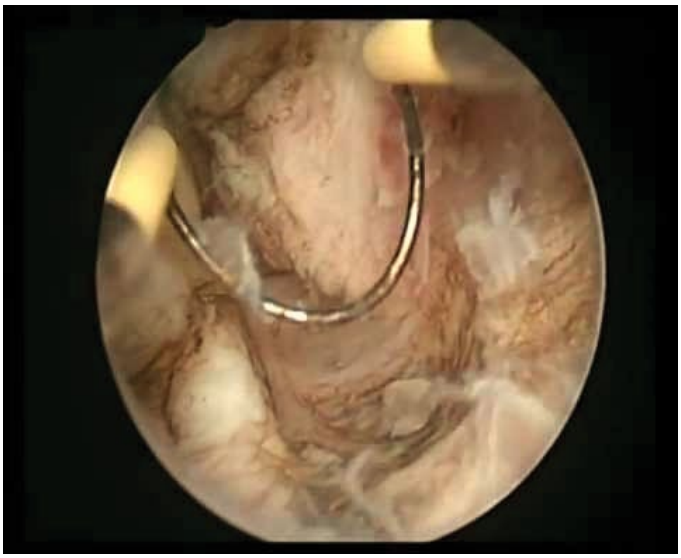

Figure 2: Resection of endometrial carcinoma in early stage (IA)

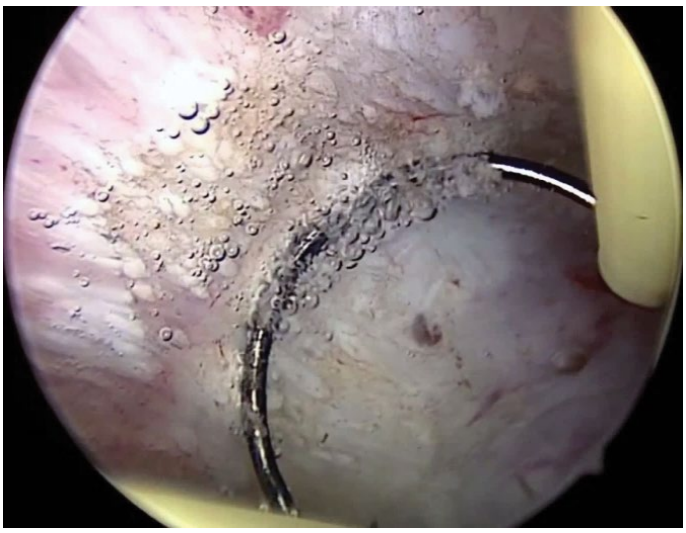

Figure 3: Resection of endometrial carcinoma in early stage (IA)

It should be noted that the running speed of the electrode along the inner surface of the uterus was not fixed (on average 3-4 mm/sec.), being a subjective parameter.

The selected speed of movement of the active electrode was determined by the change in color and appearance of the endometrium. The tissues subjected to electrodestruction acquired a characteristic yellow-brown color and lost their soft structure.

After the hysteroresectoscopic ablation of the endometrium, all studied patients were in the hospital under our supervision for 4 hours. Due to the risk of septic complications in the postoperative period, all women were prescribed an anti-inflammatory therapy for prophylactic purposes for a period of 7 days. Upon discharge from the hospital, all patients underwent a pelvic ultrasound, paying attention to the condition of the uterus and the presence of residual fluid in the uterine cavity. Ultrasound made it possible to exclude hematoma caused by stenosis of the internal cervical orifice in cases of electrosurgical treatment of the isthmus area. Adjuvant hormone therapy was not prescribed.

Subsequently, ultrasound control was performed regularly once a month for 3 months, then once every 3 months, and later, in the absence of data for disease recurrence, once every 6 months for 2 years. Ultrasound, performed both transabdominally and transvaginally, was used to evaluate the following indicators: the length of the body of the uterus, the anteroposterior size, the size of the m-echo, the structure and location of the endometrial areas, if any,

the obliteration of the uterine cavity due to the formation of synechiae, as well as the size and the structure of the ovaries.

In case of m-echo increase, according to ultrasound data, by more than 4 mm 6 months after the operation (when the time came for rejection of the coagulation crust), an aspiration biopsy of the endometrium was performed. After 6 months from the date of ablation, all patients underwent control hysteroscopy with targeted endometrial biopsy to determine the condition of the inner surface of the uterine cavity.

Conclusion

1. Endometrial ablation is indicated in case of benign endometrial diseases, precancerous conditions and cancer of the uterine body in early stage (IA) in pre- and postmenopausal patients who show ineffectiveness, resistance or contraindications to hormonal therapy or radical surgical treatment due to a severe extragenital pathology (obesity, diabetes, etc.). The results of the conducted study allow us to recommend endometrial ablation as an alternative to classical treatment methods (hormonal replacement therapy and excision of the uterus with appendages) in patients with atypical endometrial hyperplasia and early stage endometrial cancer (IA).

2. To increase the efficiency of endoscopic surgery and prevent significant intravasation of interstitial fluid, ablation should be performed in phase I of the menstrual cycle (days 9-10).

3. The most effective are resection and vaporization regimens. Steaming is the safest way to ablate the endometrium, as it excludes bleeding and perforation of the uterine wall.

4. Histological examination of operative parts shortly after ablation showed a greater depth of necrosis in the case of electrodestruction of the endomyometer in the vaporization and resection regimes. Therefore, the depth of tissue necrosis in the case of vaporization was 0.4-1 cm, and in the case of coagulation — up to 0.4 cm.

5. Ablation is contraindicated in the following cases: invasive endometrial cancer and pronounced organic endometrial pathology (uterine myoma at more than 12 weeks of pregnancy, grade II-III adenomyosis).

6. The increased efficiency of endoscopic surgery (95%) depends on the effectiveness of the diagnostic stage and the choice of an appropriate ablation method (coagulation, resection, vaporization).

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