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## Method of Conservative Myomectomy - Expansion of Hysteroresectoscopic Capabilities by Assistive Technologies.

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### ABSTRACT

This paper presents the experience of surgical treatment of women diagnosed with subserous interstitial uterine myoma with centripetal growth through the transcervical myomectomy with the use of blood saving technologies. On the basis of the gynecological department of the endosurgery clinic KORL and gynecological department №3 of medical sanitary unit of Kazan (Volga) Federal University the method of transcervical conservative myomectomy was implemented on the background of subserous interstitial and transmural location of nodes, making it possible to preserve the genital organs and avoid laparotomy and hysterectomy. Transcervical hysteroresectoscopy of submucous-interstitial and intramural nodes extends the capabilities of intrauterine surgery in the treatment of patients with complicated fibroids, and solves the problem of unresectable nodes. The analysis of long-term results of treatment showed that these methods are high-tech, effective, minimally invasive, do not require long-term rehabilitation of patients after the conducted surgery. Such operations allow for preservation of the genital organ even in the patients having previously been proposed the organ-resecting radical surgery, such as amputation and hysterectomy. The introduction of modern technology in organ healing process solves the problem of the treatment of patients with submucous-interstitial and intramural uterine myoma, which is very important for patients of reproductive age who wish to preserve their menstrual and reproductive function.

Keywords: leiomyoma of the uterus body, hysteroresectoscopy, infertility, miscarriage.

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## INTRODUCTION

Uterine myoma is a very common gynecological disease that causes its significance not only in medical and biological, but also in socio-economic aspects [1, 4, 7, 25]. Its prevalence in the reproductive period can be 20 to 40% and increases with age [7]. The role of uterine myoma in causing infertility and miscarriage is the subject of various discussions [4, 7]. Most authors note its adverse effect on the female fertility [4, 6]. Patients suffering from infertility, have myoma in 5 - 10% of cases, however, only 1 - 2.4% have it as the only reason [4, 6]. In addition, uterine myoma in pregnant patients is associated with a high risk of threatened termination, the development of placental insufficiency, rapid tumor growth, trophic disorders, and the necrosis of myoma node, premature detachment of normally situated placenta, fetal malposition, complications during delivery, and the early postnatal period [6, 21]. Considering that in the past decade the said pathology rapidly became "younger", and some difficulties arose its early diagnosis and treatment [6].

Currently, the surgical treatment of uterine fibroids is the priority. And subject to that a large percentage of patients with uterine myoma is represented by women of reproductive age, the leading methods of treatment are the uterine reconstructive and plastic surgery. Currently, the main method of conservative surgical treatment of this disease is the use of myomectomy with laparoscopic or abdominal approaches. The task of the surgeon in the performance of such operations is to enucleate the myoma node and apply the appropriate tiered seams. However, many authors have described cases of incompetent scar after myomectomy during pregnancy, especially after using endoscopy [17, 21].

In this regard, the most acute questions concern today the method of operation and the approach selection.

To date, the classic indication for hysteroscopy was the submucosal location of the tumor. The frequency of this type of nodes ranges from 23 to 30% [3,4]. Among all types of uterine myomas, a submucosal myoma is the most manifesting form: it is accompanied by debilitating hemorrhagic syndrome or infertility, or recurrent miscarriage, and limits the reproductive capabilities.

A limitation of hysteroscopy is the large tumor size and type II nodes, which make the operation dangerous due to the increased risk of uterine perforation and bleeding. In this case, despite the woman's desire to keep her genital organ, the radical options of surgical interventions are suggested.

## RESEARCH METHODS AND PATIENT'S CHARACTERISTICS

The study has been conducted on the basis of the gynecological department of the endosurgery clinic KORL and gynecological department No.3 of MSU K(V)FU. The own experience has been presented with a retrospective analysis of 34 inpatient records of women aged 18 to 43 years, with a non-implemented reproductive function during the period from 2010 to 2015.

Based on the findings of sonographic study and office hysteroscopy, the women were diagnosed with subserous interstitial uterine myoma D25.2 (18 people) or intramural uterine myoma (D25.1). The selection criteria for surgical treatment were hysteroscopic pattern - the uterine cavity deformed with a node. The dominant node dimensions according to ultrasound and/or MRI ranged 0.9 to 39 mm. All patients had hypermenstrual syndrome and iron-deficient anemia of varying severity. The initial value of the hemoglobin level at the time of first treatment was  $91.2 \pm 9.1$  g/l. Twenty-nine women (85.3%) in the study group suffered from infertility, five women (9.2%) - from habitual miscarriage. Two patients had failed attempts of *in vitro* fertilization in the past.

## RESULTS AND DISCUSSION

On the basis of the gynecological department of the endosurgery clinic KORL and gynecological department №3 of medical sanitary unit of Kazan (Volga) Federal University the method of transcervical conservative myomectomy was implemented on the background of subserous interstitial and transmural location of nodes, making it possible to preserve the genital organs and avoid laparotomy and hysterectomy.

With the accumulation of surgical experience, it was observed that even intramural nodes with centripetal growth and subserous interstitial nodes displacing the uterus are transcervically resectable. Gradual cutting of capsule, extirpation of the visible part of the node allows removing the tumor of almost any size and from any location point.

The treatment algorithm has been developed for patients with transmural nodes.

The first step was a diagnostic hysteroscopy with endometrial biopsy in order to clarify the size and location of the node. Subserous interstitial nodes without submucosal component are well visible during hysteroscopy in the first phase of the cycle, and therefore available for hysteroresectoscopy. To determine the localization of the node, the data of ultrasound scan and hysteroscopy were summarized, and, if necessary, the magnetic resonance imaging was performed.

The second stage involves the actual hysterectomscopy of tumor tissue. The aim of the first surgery is the node capsule destruction and maximum removal of the tumor volume. During the surgery, the tissue is gradually removed, which is released under the action of the natural tonus of the myometrium. For better effectiveness of this stage, the uterotonic agents are administered intraoperatively. As the node is extruded into the uterus, the tumor tissue is removed. The first stage of hysterectomscopy is completed when the uterus acquires a regular triangular shape, and no new resectable tissue is generated in the cavity.

After the first stage of resection, the patient is discharged from the hospital under outpatient observation and appointed for follow-up hysteroscopy.

As a rule, after 2 weeks, the control hysteroscopy can show the uterus fibromatous highly-fibrous node that was "squeezed" to the uterine cavity under the action of the myometrium tonus, thereby helping the surgeon and the patient to get rid of the pathological formation.

The task of the final stage is a resection of residual node. The last stage did not cause any technical difficulties and was accompanied by minimal blood loss.

According to the results of analysis, in the first group of patients with subserous interstitial node location, 14 patients (78%) have fully recovered after two-phase submucosal hysteroresectoscopy of the node component, and 4 patients (22%) - after three-phase operation. While in the second group of patients with transmural fibroid localization only one patient underwent a third episode of hysteroresectoscopy to release the uterus.

The positive results of the conducted conservative treatment were revealed by the method of an active call and a survey of the treated patients: two women in the first group gave birth to healthy mature infants, and six patients are currently pregnant. In the second group, eleven patients became pregnant, four of whom have already become mothers.

## CONCLUSION

Positive aspects of hysteroresectoscopic surgeries: minimally invasive method, no need for hysterectomy and convenient resection with simultaneous morcellation and removal of tumor tissue allow considering this type of operations as a gentle alternative to hysterectomy or conservative myomectomy.

Transcervical hysteroresectoscopy of submucous interstitial and intramural nodes extends the capabilities of intrauterine surgery in the treatment of patients with complicated fibroids, and solves the problem of unresectable nodes. Such operations allow for preservation of the genital organ even in the patients having previously been proposed the organ-resecting radical surgery, such as amputation and hysterectomy. The introduction of modern technology in organ healing process solves the problem of the treatment of patients with submucous-interstitial and intramural uterine myoma, which is very important for patients of reproductive age who wish to preserve their menstrual and reproductive function.

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