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# Delivery and organ-preserving surgery in a woman with high-risk uterine myoma

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## ABSTRACT

This study presents a clinical case from the practice of the State Budgetary Healthcare Institution of the Republic of Bashkortostan "CCPC" in Ufa regarding an organ-preserving operation in a woman with high-risk uterine myoma of isthmus localization that shifted to the posterior wall of the uterus. In May 2023, at 39 weeks of gestation, patient T. was scheduled for a planned operative delivery by cesarean section, followed by conservative myomectomy (removal of uterine fibroids). The indication for surgery was uterine fibroids of isthmus localization with transition to the posterior wall of the uterus, which made vaginal delivery impossible. In this patient, uterine fibroids were discovered during pregnancy. Ultrasonography and magnetic resonance imaging (MRI) were performed. At routine ultrasound screenings, uterine fibroids of isthmus localization measuring 123×99×112 mm without malnutrition of the node were noted. MRI confirmed the diagnosis of large uterine fibroids. A transverse suprapubic laparotomy was performed. The first stage of the combined operation was a cesarean section in the lower segment, and a live full-term boy (weight, 3,480 g; height, 53 cm; Apgar score, 7–8–9 points) was extracted. During the revision of the pelvic organs, a myomatous node was found in the isthmus with a transition to the posterior wall of the uterus, measuring 100×120 mm, without signs of necrosis. Conservative myomectomy without penetration into the uterine cavity was performed. The bed was sutured using separate sutures, and hemostasis was achieved. The myomatous node weighed 570 g. In this clinical case, a favorable full-term pregnancy was possible despite the high-risk uterine fibroids, large sizes, and atypical localization. Combined organ-preserving operations are currently being carried out, which enable a woman to preserve the organ and further realize her reproductive potential.

**Keywords:** uterine fibroids; benign tumor; pregnancy; delivery; organ-preserving surgery; cesarean section; conservative myomectomy.

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## Родоразрешение и органосохраняющая операция у женщины с миомой матки высокого риска

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### АННОТАЦИЯ

Представлен клинический случай из практики Городского клинического перинатального центра Уфы по поводу органосохраняющей операции у женщины с миомой матки высокого риска перешеечной локализации с переходом на заднюю стенку матки. В мае 2023 г. на сроке беременности 39 недель у пациентки Т. было запланировано оперативное родоразрешение путём кесарева сечения, с последующим расширением объёма операции до консервативной миомэктомии. Показанием к операции послужила миома матки гигантских размеров перешеечной локализации с переходом на заднюю стенку матки, вследствие чего родоразрешение через естественные родовые пути невозможно. Миома матки у данной пациентки обнаружена во время беременности. Инструментальные методы, использованные при обследовании: ультразвуковое исследование (УЗИ), магнитно-резонансная томография (МРТ). На плановых УЗИ-скринингах диагностировали миому матки перешеечной локализации размером 123×99×112 мм без нарушения питания узла. Данными МРТ диагноз «миома матки больших размеров» был подтвержден. Произвели поперечную надлобковую лапаротомию. Первым этапом сочетанной операции выполнили кесарево сечение в нижнем сегменте. В результате извлекли живого доношенного мальчика (вес 3480 г, рост 53 см, 7–8–9 баллов по шкале Апгар). В ходе ревизии органов малого таза обнаружили миоматозный узел 100×120 мм в области перешейки, с переходом на заднюю стенку матки, без признаков некроза. Произвели консервативную миомэктомию без проникновения в полость матки. Ложу ушили отдельными швами. Гемостаз достигнут. Вес миоматозного узла составил 570 г. Данный клинический случай продемонстрировал, что благоприятная доношенная беременность возможна при миоме матки высокого риска, больших размеров, нетипичной локализации. Органосохраняющие комбинированные операции дают возможность женщине сохранить орган и в дальнейшем реализовать репродуктивный потенциал.

**Ключевые слова:** миома матки; доброкачественная опухоль; беременность; родоразрешение; органосохраняющая операция; кесарево сечение; консервативная миомэктомия.

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# 一名患有高危子宫肌瘤的妇女的分娩和器官保留手术

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## 摘要

本文介绍了乌法市临床围产中心的一个临床病例，该病例涉及对一名患有高危子宫肌瘤的妇女进行器官保留手术，该肌瘤经颈部定位并过渡到子宫后壁。2023年5月，患者T在孕龄39周时被安排进行剖腹产手术，随后手术范围扩大到保守性子宫肌瘤剔除术。手术指征是经颈部巨大子宫肌瘤，并向子宫后壁过渡，因此无法通过自然产道分娩。该患者的子宫肌瘤是在怀孕期间发现的。检查中使用的仪器方法：超声检查、核磁共振成像。常规超声检查诊断为经颈部定位的子宫肌瘤，大小为  $123 \times 99 \times 112$  毫米，无结节营养不良。核磁共振成像数据确诊为巨大子宫肌瘤。于是进行了耻骨上横切剖腹手术。联合手术的第一阶段是下段剖腹产。结果，分娩出了一名早产男婴（体重3480克，身高53厘米，Apgar 评分 7-8-9）。在检查盆腔器官时，发现峡部有一个  $100 \times 120$  毫米的肌瘤结节，向子宫后壁过渡，没有坏死迹象。在不深入宫腔的情况下，进行了保守性肌瘤切除术。用单独的缝线缝合了子宫床。止血成功。肌瘤结节的重量为 570 克。这一临床病例表明，高危、巨大、不典型子宫肌瘤患者可进行良好的足月妊娠。保全器官的联合手术可使妇女保留器官，并进一步发挥其生殖潜能。

**关键词：**子宫肌瘤、良性肿瘤、妊娠、分娩、器官保留手术、剖腹产、保守性肌瘤切除术。

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## INTRODUCTION

Uterine fibroids (myoma) are a benign monoclonal tumor originating from cervical or uterine smooth-muscle cells [1–3].

Hormones, specifically estrogens and progesterone, are growth factors of uterine fibroids [1]; that is why this type of tumors tend to grow during pregnancy [4]. Uterine fibroids are the most common benign tumors affecting the pelvic organs in women [1]. Pregnancy with uterine fibroids occurs in about 10% of pregnant women [4]. In most cases, uterine fibroids do not prevent pregnancy; however, it may cause some complications: necrosis and nutritional disorders of the node, isthmic-and-cervical insufficiency when the node is located in the isthmus or cervix, placental disorders, delayed fetal development, placental abruption, increased risk of pelvic vein thrombosis and premature labor [5]. Some rare complications include joint contractures and fetal skeletal deformities [6]. Many authors state that uterine fibroids during pregnancy increases the risk of pelvic presentation of fetus [7, 8]. Delivery in women with uterine fibroids is also accompanied by the following complications: abnormal labor, bleeding, placenta accreta, postpartum uterine subinvolution, infectious complications up to sepsis [9].

According to anatomical classification, uterine fibroids are classified into intramural, submucosal, subserosal, intraligamentary, cervical or isthmic, and parasitic [1, 10]. This article provides a review of the clinical case describing delivery by a woman with uterine fibroids of isthmus localization with transition to the posterior wall of the uterus (high risk) resulting in organ preservation, as well as preserved reproductive capacities. The surgery was performed at the tertiary maternity hospital in Ufa (State Budgetary Healthcare Institution of the Republic of Bashkortostan “City Clinical Perinatal Center”).

## CASE DESCRIPTION

In May 2023, at 39 week of gestation, patient T. was scheduled for a planned operative delivery by cesarean section with further surgery expansion to conservative myomectomy with the transvaginal approach. The indication for the surgery was uterine fibroids of isthmus localization with transition to the posterior wall of the uterus, which made vaginal delivery impossible. Based upon relevant experience in combined-approach (transabdominal and transvaginal) surgeries, specifically in cesarean section and conservative myomectomy with removal of large nodes, the decision was made to have the myomatous node removed.

According to the past medical history: it is the patient's sixth pregnancy now and the third anticipated delivery. The two previous pregnancies resulted in vaginal delivery with no complications; three other pregnancies resulted in early-term medical abortions. The first half of the pregnancy was uncomplicated; in the second half, during Weeks 35–36 of gestation, the patient received in-patient treatment for placental abnormalities. Uterine fibroids were discovered during this pregnancy.

The woman was examined as required by 2020 Order of the Ministry of Health Care of the Russian Federation No. 1130n *On approval of procedure for provision of medical care in obstetrics and gynecology*.

The safe methods of uterine fibroids diagnosis during pregnancy are ultrasonography (US) and magnetic resonance imaging (MRI) [6, 11]. These precise methods were applied to examine patient T. for more specific and detailed study of the disease. At routine ultrasound screening, uterine fibroids of isthmus localization, measuring 123×99×112 mm without malnutrition of the node was noted. Figures 1–3 demonstrate the MRI pattern of uterine fibroids during pregnancy.

A transverse suprapubic laparotomy was performed. The first stage of the combined operation was a cesarean

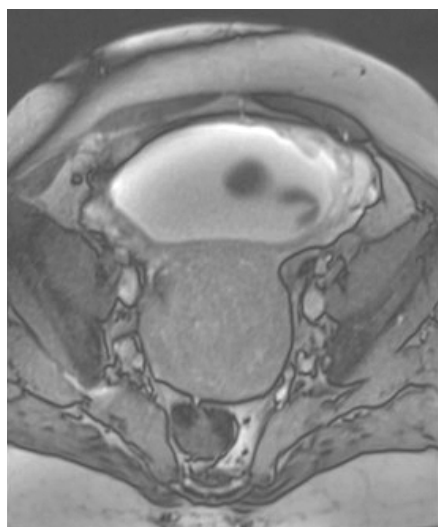


**Fig. 1.** Magnetic resonance image of patient T's uterine myoma in the transversal plane during pregnancy.

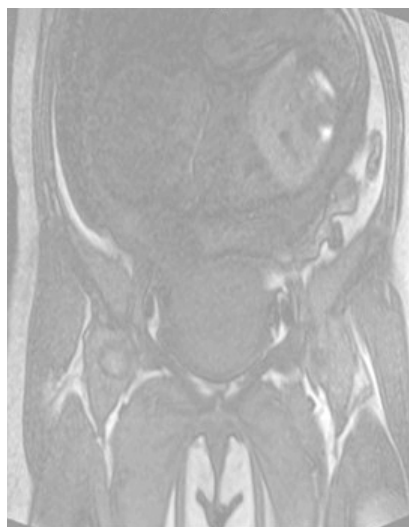


**Fig. 2.** Magnetic resonance image of patient T's uterine myoma in the frontal plane during pregnancy.

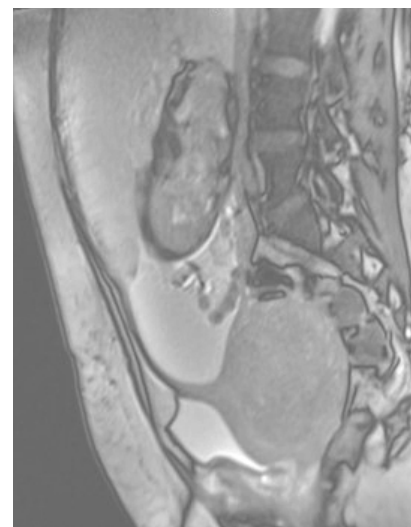


**Fig. 3.** Magnetic resonance image of patient T's uterine myoma in the sagittal plane during pregnancy.

section in the lower segment, and a live full-term boy (weight 3,480 g, length 53 cm, Apgar score 7–8–9) was extracted. During the revision of the pelvic organs, a myomatous node was found in the isthmus with a transition to the posterior wall of the uterus, measuring 100×120 mm, without signs of necrosis. The surgical team was ready to remove the myomatous node via the transvaginal approach. However, the situation changed after the fetus was retrieved. Trans-abdominal access method was found to be more convenient. Conservative myomectomy without penetration into the uterine cavity was performed. The bed was sutured up with separate sutures. Hemostasis was achieved. The myomatous node weighed 570 g (Figs. 4, 5).

The total blood loss was 700 mL, which does not exceed normal blood loss during isolated cesarean sections. Based on histology findings, the intramural uterine fibroids diagnosis was confirmed. On Day 4, the woman was discharged in satisfactory condition under the care of an obstetrician-gynecologist.

We had already had relevant experience in completing a similar two-stage organ-preserving surgery. The first stage involved cesarean section and the second stage was transvaginal removal of myomatous node, measuring 18.5 cm. in diameter. The outcome was favorable for the woman's life and health. Figures 6, 7 show the myomatous node via the transvaginal approach and the sutured bed.

## CONCLUSION

Organ-preserving surgeries for pregnancies with uterine fibroids are now quite widespread [1, 6]. However, conservative myomectomy, if performed in combination with cesarean section, requires specific surgical skills, specifically,

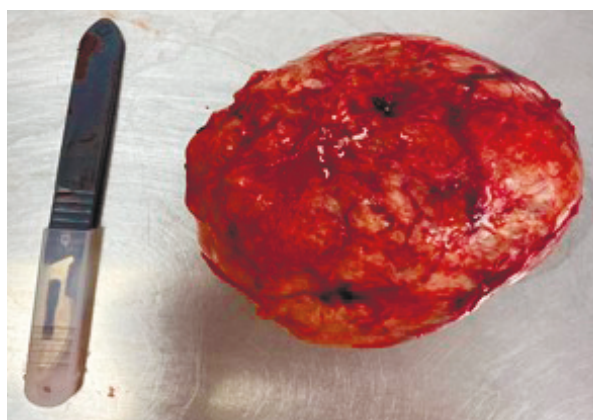


**Fig. 4.** Macropreparation of the myomatous node after removal.



**Fig. 5.** Macropreparation of the myomatous node after sectional removal.

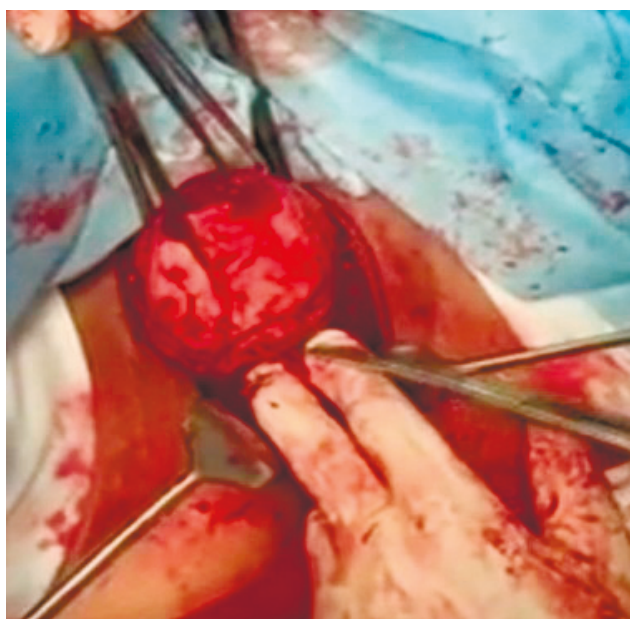


**Fig. 6.** Myomatous node in transvaginal access before conservative myomectomy.



**Fig. 7.** Sutured myoma bed after conservative myomectomy by transvaginal access.

mastery in uterine vessel ligation techniques, hysterectomy, internal iliac artery ligation. The surgical team must be proficient in applying surgery techniques via any type of surgical approach. The hospital should have highly-qualified resuscitation and anesthesia capacities. Blood banking for hemotransfusion is required, as well as the opportunity to use Cell-Saver blood reinfusion machine.

Available literature data [6, 11] confirm successful myomectomies during cesarean sections, so the method should be considered feasible.

Pregnancy with high-risk uterine fibroids require continuous monitoring by an obstetrician-gynecologist. A delivery strategy for such patients should be identified prior to actual commencement of labor to provide the most favorable outcome. If a woman lives quite far away from a tertiary in-patient hospital, she should be admitted to hospital on time. In this clinical case, a favorable full-term pregnancy was possible despite the high-risk uterine fibroids, large sizes, and atypical localization. Combined organ-preserving

operations are currently being carried out, which enable a woman to preserve the organ and further realize her reproductive potential.

## ADDITIONAL INFO

**Authors' contribution.** All authors confirm that their authorship meets the international ICMJE criteria (all authors made a substantial contribution to the conception of the work, acquisition, analysis, interpretation of data for the work, drafting and revising the work, final approval of the version to be published and agree to be accountable for all aspects of the work).

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**Consent for publication.** The patient who participated in the study signed an informed consent to participate in the study and publish medical data.

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