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# ISTHMOCELE: MODERN TREATMENT AND CORRECTION STRATEGIES

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## ABSTRACT

Caesarean section is one of the most frequently performed obstetric procedures. In recent decades, there has been a more than twofold increase in its frequency, which now amounts to approximately 24%. In this regard, the issue of the strength of the uterine scar after a cesarean section, as well as the impact of this scar on the course of subsequent pregnancies and childbirth, becomes especially important. This article presents a unique clinical case of isthmocele of significant size in a woman of young reproductive age. Taking into account the emerging symptoms that cause concern in the patient, a decision was made to perform metroplasty using minimally invasive gynecological methods.

**Key words:** isthmocele, cesarean section, metroplasty, uterine scar failure.

## INTRODUCTION

Operative delivery in modern obstetrics improves pregnancy outcomes for both mother and child. According to the recommendations of the World Health Organization, the proportion of operative deliveries should not exceed 10%, and any further increase in this figure is considered inappropriate [6]. In Uzbekistan, this figure can range from 8 to 42%. The increase in the number of cesarean sections is due to the fact that this procedure helps reduce perinatal risks, and, according to some studies, reduces trauma in both newborns and mothers. The decision to repeat cesarean section depends on the complete restoration of the incised uterine wall. The reliability of the transverse scar on the uterus after surgery throughout pregnancy and during labor contributes to a significant

reduction in obstetric and perinatal complications. In this regard, the issue of the state of the scar on the uterus after cesarean section and how this condition affects the course of subsequent pregnancies and childbirth becomes especially important. [11].

Effective healing of the uterine suture and formation of a high-quality scar after cesarean section is one of the key aspects of this surgical procedure [7]. The process of suture healing is influenced by various factors, such as the duration of the operation, the amount of blood loss during cesarean section, emergency indications for the operation, errors in the technique of uterine suturing, the use of inappropriate suture material, as well as the development of endometritis after surgery [4].

The connection between scar insufficiency and gynecological manifestations in women who are not pregnant has been identified relatively recently. The presence of a defect in the area of the uterine scar may manifest itself in the form of heavy and prolonged menstruation, as well as in the form of prolonged spotting both before and after menstruation, painful menstruation (algomenorrhea ) and pain during intercourse (dyspareunia) [5].

Currently, there is no single standard for the treatment of isthmocele [10]. If uterine scar insufficiency is detected or if there is a suspicion of it based on ultrasound data, hysteroscopy is recommended. If the ultrasound and hysteroscopy results reveal a shallow isthmocele, and there are complaints of painful menstruation and postmenstrual spotting, hysteroresectoscopic resection of this defect may be performed. In case of complete uterine scar insufficiency, the presence of complaints, and in order to prevent complications during a planned pregnancy and childbirth, it is advisable to perform metroplasty outside of pregnancy [1]. I would like to point out that to date there are no specific indications for metroplasty. hysteroresectoscopically or laparoscopically. However, most studies claim that a uterine scar defect of less than <3mm can be prevented by the hysteroscopic method, and patients with larger isthmocele sizes (>3mm) are recommended to undergo metroplasty through an abdominal approach [9].

**Aim of research**

The aim of the study is to correct the isthmocele of significant size with preserving reproductive function of patient.

**Material and methods of research**

Patient B.Z. 32 years old, came to the City Med clinic with the diagnosis: Insolvency of the uterine scar - Isthmocele (30*40 mm). Infertility 2.

The woman underwent diagnostic surgery. hysteroscopy: detection of a defect in the postoperative scar measuring 30*40 mm. Given the large size of the isthmocele, it was decided to perform metroplasty using laparoscopic access.

**Results and discussion**

Patient B.Z. was admitted with complaints of prolonged spotting bloody discharge from the genital tract both before and after menstruation, algomenorrhea, dyspareunia, and absence of pregnancy for 7 years.

From the medical history: according to her, for 7 years after the cesarean section, she repeatedly received anti-inflammatory, hormonal therapy, without effect. An ultrasound of the uterus and appendages diagnosed a defect of the postoperative scar (after the cesarean section), Isthmocele.

Ultrasound examination of the uterus and appendages transvaginal: The uterus is pear- shaped, measuring 52 x 66 x 46 mm. The myometrium in the area of the postoperative scar along the anterior wall is a formation? Scar defect? 12 × 18 mm. There is an accumulation of fluid in the area of the scar defect (hydrometra) in a volume of 12 ml. The uterine cavity is not dilated, with an unclear outline. Endometrium 7 mm. Ovaries: right 32 ×26 ×24 mm, left 24 × 22× 3 0 mm.

Obstetric and gynecological history: Menarche at 1-4 years, 3-4 days, after 30 days, scanty, painful, irregular, bloody discharge before and after menstruation. Sexual life since 2 6 years, in marriage I. Number of pregnancies - 3. Births - 1 (planned cesarean section 2017 - in Kazakhstan, non-developing pregnancy - 2 (2015, 2016) abortions - 0.

Gynecological status: External genitalia organs without features. Hairiness: female type. The inguinal lymph nodes are not enlarged. The urethra and paraurethral glands are unchanged, there is no discharge. Bartholin's glands are unremarkable.

In the mirrors: Vaginal mucosa: normal coloration, without visible pathological changes. Folding: normal. The cervix is cylindrical; 3 cm long. The discharge is bloody and scanty. The mucous membrane is of normal color. Body the uterus is anteflexio, occupies a median position, mobile, painless, normal size, the shape of the uterus is correct, the consistency is dense. The uterine vaults on both sides are not enlarged, painless. The vaults are deep. The parametrium is not infiltrated.

Diagnosis on admission (preliminary): Infertility 2. Failure of the uterine scar (Isthmocele)

Concomitant diagnosis: condition after operation: appendectomy 2014, cesarean section 2017. Anemia stage 1.

She was examined, screened and consulted as planned and was hospitalized in the gynecology department.

A management and treatment plan has been outlined: Operative hysteroscopy, isthmoplasty. If it is impossible to eliminate the defect by hysteroscopy, the patient is also prepared for metroplasty by laparoscopic access.

Diagnostic hysteroscopy. Procedure: Under aseptic conditions, the cervix is exposed in mirrors, grasped with bullet forceps, and brought down. The length of the uterus according to the probe is 8 cm. The uterine cavity: normal size, smooth wall relief. Intrauterine pathology was revealed: isthmocele, a defect after a surgical scar measuring 3.0 * 4.0 cm. Endometrium: pale pink, vascular pattern is not expressed. Hemorrhages are fine-point. The orifices of the fallopian tubes are accessible for examination, visible on the right and left. Endocervix: without features.

Considering the large size of the isthmocele and the impossibility of performing isthmoplasty during surgical hysteroscopy, it was decided to perform metroplasty laparoscopically.

A laparoscope and 3 trocars for manipulators and operating rooms instruments. In the abdominal cavity there are pronounced adhesions between the omentum and the small pelvis. Adhesiolysis was performed, isolating the small pelvis with the omentum. In the anterior uterine space were found pronounced cicatricial changes in the area of the vesicouterine fold, cicatricial adhesions between bladder and scar area, without pronounced borders. A uterine manipulator was inserted into the uterine cavity. The vesicouterine fold was incised, the urinary bladder was difficult due to pronounced cicatricial changes, shifted downwards. The anterior wall of the lower segment and cervix is degenerated, thinned to 2 mm. The retro-uterine space is without pathology. Sacral-uterine ligaments are visible, no pathology. The uterus is visible, spherical in shape, size 70 × 60 × 50 mm, adenomyosis, with increased vascularity pattern, hyperemia, inflammatory changes on the surface. In the area of postoperative a scar on the uterus in the area of the lower uterine segment-isthmus - isthmocele dimensions 30 × 40 mm. Adhesions with the urinary bladder. The ovary on the right and left is normal size, visually unchanged. Peritoneum without pathology. Fallopian tubes are visible throughout, 10 cm long. Appendix is not visible. Omentum without pathology.

After opening and lowering plica vesicouterinae, for more accurate detection of the location of the isthmocele on the uterus, diagnostic hysteroscopy was performed under laparoscopy control - diaphonoscopy (or transillumination). Bipolar coagulation was used to mark the area of the isthmocele on the uterus.

Next, excision of the old uterine scar was performed, followed by metroplasty. The wound on the uterus was sutured with interrupted Vicryl sutures.

Given the woman's history of secondary infertility, chromohydrotubation was performed with 10 ml methylene blue solution. The fallopian tubes are passable on both sides. Sanitation, counting of dressing material and instruments. Hemostasis control. Desufflation. Trocar wounds were sutured with intradermal Vicryl sutures.

**Diagnosis after operations:**

Main: Isolation of the small pelvis with omentum. Isthmocele (3.0*4.0 cm). Adhesive process in the small pelvis.

Concomitant diseases: condition after operation: appendectomy 2014, cesarean section 2017. Anemia stage 1.

The postoperative period was uneventful, wound healing was primary. The patient was discharged on the 2nd day under observation by a doctor at the place of residence.

The results of the study were assessed at 1, 3, 6, 12 months after the operation using ultrasound examination. (Table No. 1)

*Table 1.*

*Dynamics of indicators before and after the operation.*

| | **Indicators** | **Before surgery** | **1 month after surgery** | **6 months after surgery** | **12 months after surgery** |
|---|---|---|---|---|---|
| 1 | prolonged spotting | + | - | - | - |
| 2 | algomenorrhea | + | - | - | - |
| 3 | dyspareunia | + | + | - | - |
| 4 | linear inclusions increased echogenicity | + | + | - | - |
| 5 | cavity expansion | + | - | - | - |
| 6 | hydrometer | + | - | - | - |
| 7 | isthmocele | + | - | - | - |
| 8 | local blood flow | - | + | + | + |
| 9 | the onset of pregnancy | - | - | - | + |

Also, clinical and anamnestic data were collected from the patient in the postoperative period. The postoperative period proceeded without any complications. Already immediately after 1 month after the operation, the above complaints were not noted, about which the patient came: prolonged spotting bloody discharge from the genital tract both before and after menstruation, algomenorrhea, dyspareunia.

Ultrasound diagnostics of the uterine scar 1 month after surgery showed minor point, linear inclusions increased echogenicity (reflection of suture material) in the suture area, which were not detected in subsequent studies in dynamics. There were no significant inflammatory changes. Echostructure of the scar corresponded in acoustic density to the uterine wall ($p < 0.0\ 1$), expansion of the uterine cavity, accumulation of fluid in the isthmocele -hydrometer area was not detected. The greatest During this study, attention was paid to the detection of isthmocele and echographic assessment of the anterior wall of the uterus in the projection of the scar. An isthmocele measuring 3.0*4.0 cm in the lower segment, which was discovered after a first-term operative delivery, was not detected in any ultrasound examination after the isthmoplasty.

By 6 months after the operation, the scar area was undetectable, since the postoperative line suture was not visualized. The presence of local blood flow in the scar area in the postoperative period was also assessed in a Doppler study. From the first ultrasound studies, restoration of local blood flow in the suture area, which was absent before the operation, was detected.

Given the positive dynamics of recovery, the patient was allowed to plan a pregnancy 6 months after the operation. 10 months after the operation, the patient experienced a natural pregnancy, after 7 years of secondary infertility. This once again proves the fact that isthmocele can also lead to infertility in women of reproductive age. [2,3,8]

## CONCLUSION

Considering the above unique clinical case with isthmocele of significant size, we can come to the following conclusion:

1. In the presence of symptoms such as bloody discharge from the genital tract before and after menstruation, algomenorrhea, dyspareunia, it is recommended to exclude isthmocele using ultrasound examination.

2. To establish an accurate diagnosis and, if possible, perform isthmoplasty, it is recommended to perform a diagnostic hysteroscopy.

3. To identify the location of the isthmocele, it is advisable to use diaphanoscopy of the uterus - performing diagnostic hysteroscopy under laparoscopy control.

4. In order to preserve organs and eliminate symptoms of isthmocele of significant size, it is recommended to perform metroplasty using laparoscopic access.

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