

Prospects For The Rehabilitation Of Women Under Cesarean Section

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Abstract: One of the popular methods of surgical birth is the cesarean section, which replaced the obstetric forceps, which were widely used in the last century. In modern obstetrics, it is most often used for delivery in complicated pregnancy and childbirth [1,3,5]. The frequency of operative delivery in our country is about 23% of all deliveries. According to reports for 2010-2018. there is an increase in the number of births (from 5100 to 5897 per year), as well as an increase in women with a scar on the uterus (from 568 to 618 cases), with women with one scar prevailing. The overwhelming majority of women with operative delivery were from rural areas. Primiparas averaged 8.7%. During pregnancy, from 68% to 77.2% of women had various extragenital diseases such as obesity, myopia, chronic pyelonephritis, chronic gastritis, anemia, hypertensive neurocirculatory dystonia, arterial hypertension, hydronephrosis, varicose veins. In more than 90% of cases, childbirth ended with a repeated cesarean section with excision of the postoperative scar, and only 7.7-8.7% of women with one full-fledged scar on the uterus gave birth through the vaginal birth canal. The main indications for a cesarean section were: a scar on the uterus, inconsistency of a postoperative scar, a combination of a scar on the uterus with obstetric pathology, and a combination of a scar on the uterus with extragenital pathology. 87.4-90.2% of operations were carried out in a planned manner and an emergency - in 9.7-12.6%. Based on the combination of the above data, the purpose of our study was to assess the viability of the postoperative scar in women who underwent cesarean section and to develop the optimal tactics for delivery, as well as rehabilitation in the postoperative period. The object of the study was 100 women from 18 to 40 years old with one scar on the uterus who had undergone a cesarean section. The patients were divided into 2 groups: the main group (35 patients) and the comparison group (65 patients). The study used general clinical studies (general blood test, general urine analysis, smear on flora), laboratory research methods (assessment of the state of hemostasis, immunohistochemical study, detection of matrix metalloproteinases (MMP 9) in the blood, biochemical blood test, determination of the level of vitamin B6 and copper in the blood, instrumental methods (ultrasound, elastography of myometrial tissues). The obtained data were subjected to automated statistical processing.

For the rehabilitation of patients, magnetotherapy and ultrasound therapy were used from the early postoperative period. The rehabilitation procedures after the course were repeated after 6 months. Based on the results of the data, an assessment was made of the viability after an operation scar, its effect on further reproductive function, and the life of women in general. And also the results of the effectiveness of early rehabilitation of women.

Keywords: postoperative scar, cesarean section, scar failure, rehabilitation of women, ultrasound therapy, magnetotherapy.

1. INTRODUCTION

Cesarean section (CS) is the most common operation in obstetrics. Modern approaches to delivery are largely characterized by aggressiveness, the manifestation of which is the increasing frequency of CS. Over the past half-century, the frequency of CS has increased significantly from 7% to 30%. According to the latest statistics from 150 countries, 18.6% of all births now occur by cesarean section, ranging from 6.0% to 27.2% in the least developed and most developed regions, respectively.

The authors point out that the increase in the number of births by CS in recent years is also because women with a history of the cesarean section have more than 90% of the probability of birth by CS during a subsequent pregnancy, thereby increasing the total number of CS in the future [6, 8, fifteen]. A study by the WHO showed that an increase in CS frequency is associated with an increase in antibiotic prescription in the postpartum period, an increase in the incidence of severe maternal morbidity and mortality. An increase in the frequency of CS higher than 15% is not recommended by WHO, since it does not affect the decrease in perinatal morbidity and mortality among children born by CS compared to that among infants who were born naturally [9, 12].

The period of adaptation to the external environment of children who were born employing KS surgery is much more difficult than those who were born through a natural birth canal [18]. For this reason, today numerous studies are devoted to the problem of adaptation of newborns after CS and timely resuscitation measures.

Thus, the importance of CS in modern obstetrics continues to grow, and it rightfully occupies a leading place among all obstetric operations by ensuring favorable outcomes for the mother and fetus in several severe obstetric complications and extragenital diseases [28]. Scientists believe that an increase in the frequency of CS is a consequence of the increase in the number of women with reproductive disorders. The difference between modern obstetrics is a kind of paradox: with a consistently high frequency of CS in the world, without a tendency to decrease, the urge to reduce the level of this operation to at least 15%, recommended by WHO, is aggravated. Against this background, the intense debate continues on the delivery of women with a scar on the uterus [22]. In this regard, priority attention should be paid to the issues of rehabilitation of women after CS, planning the next pregnancy, pregnancy support, and the choice of delivery [9, 12, 32].

2. MATERIALS AND METHODS OF RESEARCH:

The study was carried out based on the 1st clinic of SamMI in the departments of obstetrics and gynecology. The analysis of the results of the examination, complex treatment, and dynamic observation of 100 patients of reproductive age with a scar on the uterus, who underwent cesarean section, was carried out. The patients were divided into two groups according to the method of treatment:

Group I (main) (n = 35) women who underwent a cesarean section, planning to give birth through a vaginal birth canal, who will be treated with electrotherapy.

Group II (comparison) (n = 65) women who underwent CS without the use of rehabilitation therapy.

The inclusion criteria for the study were:

- scar on the uterus after cesarean section in the lower uterine segment;
- a preliminary cesarean section at a gestational age of more than 37 weeks;

The average age of the patients was 24.5 ± 4.1 years.
 The interval after cesarean section in the comparison group before repeated delivery is from 3 years to 5 years (average 3.1 ± 1.2 years) (Table 1).

Table 1
 The interval between CS and re-delivery

| Interval, years | Study group | | Control group | |
|-----------------|-------------|-------|---------------|-------|
| | Qty | % | Qty | % |
| 3 | 16 | 45,71 | 35 | 53,85 |
| 4 | 12 | 34,29 | 22 | 33,85 |
| 5 | 8 | 22,86 | 8 | 12,31 |
| Total | 35 | 100,0 | 65 | 100,0 |

The duration of the period after the cesarean section in the study group before the repeated pregnancy is from 3 years to 5 years (on average 3.3 ± 1.4 years). So, the interval after CS was 3 years in the study group in 45.71% of patients and 53.85% in the comparison group, the interval of 4 years - 34.29% of patients in the main group and 33.85% of patients in the comparison group, the interval 5 years - 22.86% of patients in the main group and 12.31% of patients in the comparison group.

In the study, along with general clinical research methods (general blood and urine analysis, smear on flora), special research methods were used, including:

- Laboratory research methods (assessment of the state of hemostasis, the immunohistochemical study of matrix metalloproteinases, biochemical blood test, determination of the level of vitamin B6 and copper in the blood).
- Instrumental methods (ultrasound, elastography of myometrial tissues). Purposeful scanning of the examined organ or neoplasms was carried out, and the presence of an adhesive process in the small pelvis was established, the main sign of which is the "immobility" of the ovary and fallopian tubes concerning the uterus and intestinal loops during the ultrasound scan, the position of the uterus and ovaries, their size, and internal structure were assessed.

All patients underwent an ultrasound examination to assess the localization of the placenta and fetometry. We also used the method of assessing the condition of the scar using ultrasound. In all cases, the thickness of the scar was from 3 to 5 mm, but this was not a decisive indicator for making a final decision. Women who were selected to attempt vaginal delivery received and signed informed consent after explaining the benefits and risks. An important factor in the selection was the positive attitudes of women to attempt a vaginal delivery. Childbirth was carried out in readiness for an emergency and under constant CTG control. Pulse, temperature, respiratory rate, and blood pressure were monitored (monitored every 15 minutes). Elastography studies were carried out at 36-38 weeks of gestation, at which the condition of the scar can be assessed reliably. The thickness of the scar 2.5-3.0 mm, the absence of pronounced deformity in the area of the scar on the uterus, its uniformity, the presence of loci of blood flow, and the absence of placentation in the area of the lower segment of the uterus were the main elastographic criteria for choosing the method of delivery in pregnant women in the study group.

After delivery, all patients were prescribed standard treatment procedures, and the patients of the main group were assigned early rehabilitation measures. Rehabilitation of patients in the study group began immediately after CS on the 4th day, in mode 2 times a day for 15 days,

the woman's repeated rehabilitation course received 6 months after CS in the mode 2 times a day for 15 days. Then observation was carried out.

3. RESULTS AND DISCUSSION

To assess the possibility of vaginal delivery, the data on the indications for the first operation of the CS is presented in Table 2, among which two main ones prevailed: anomalies of labor, not amenable to drug correction (42.86% in the main group and 43.08% in the comparative group) and progressive intrauterine hypoxia (25.71% and 29.23%, respectively).

Table 2
Indications for the first CS (abs.,%)

| indications | Research group (n=35) | | Comparison group (n=65) | |
|--------------------------------------|-----------------------|-------|-------------------------|-------|
| | Qty | % | Qty | % |
| Abnormalities of labor | 15 | 42,86 | 28 | 43,08 |
| Fetal distress | 9 | 25,71 | 19 | 29,23 |
| Clinically narrow pelvis | 5 | 14,29 | 7 | 10,77 |
| Breech presentation of a large fetus | 3 | 8,57 | 6 | 9,23 |
| Severe forms of preeclampsia | 2 | 5,71 | 3 | 4,62 |
| Premature placental abruption | 1 | 2,86 | 2 | 3,08 |

At the same time, in the postoperative period, there was a high level of various complications - they were detected in 3 (8.57%) women in the main group and 13 (20%) women in the comparison group. Violation of the contractile activity of the uterus was noted in 2.86% of cases in the main in the group and 4.62% of cases in the comparison group, wound infection was detected in 5.71% of cases in the main group and 3.08% of cases in the comparison group, endometritis was detected in 12.31% of cases in the comparison group. Our data indicate a significant percentage (16% of all examined women in both groups) of postpartum purulent-septic complications. When analyzing the level of extragenital pathology in both groups, we did not find significant differences in all forms and types (Table 3). Noteworthy is the significant frequency of diseases of the urinary system (20.0% in the main group and 18.46% of cases in the comparison group) and the gastrointestinal tract (22.86% and 15.38%, respectively). In single cases, women had chronic diseases of the upper respiratory tract and varicose veins of the lower extremities (from 4.62% to 5.71%).

Table 3
Extragenital pathology in examined women (abs.,%)

| Morbidity | Study group (n = 35) | | Comparison group (n = 65) | |
|--|----------------------|------|---------------------------|------|
| | Qty | % | Qty | % |
| Chronic upper respiratory tract diseases | 2 | 5,71 | 3 | 4,62 |

| | | | | |
|--|---|-------|----|-------|
| Diseases of the urinary system | 7 | 20,0 | 12 | 18,46 |
| Diseases of the gastrointestinal tract | 8 | 22,86 | 10 | 15,38 |
| Cardiovascular diseases | 4 | 11,43 | 9 | 13,85 |
| Diseases of the thyroid gland | 2 | 5,71 | 3 | 4,62 |
| Varicose veins (varicose veins of the lower extremities) | 3 | 8,57 | 5 | 7,69 |

When evaluating the long-term consequences of cesarean section, the analysis of the main clinical symptoms was carried out: pain syndrome, menstrual irregularities, dyspareunia, sexual dysfunction, changes in the microbiocenosis of the genital tract (Table 4).

Table 4

Long-term complications after the first cesarean section in examined women (abs.,%)

| Complications | Study group (n = 35) | | Comparison group (n = 65) | |
|-----------------------------------|----------------------|------|---------------------------|-------|
| | Qty | % | Qty | % |
| Chronic pelvic pain syndrome | - | - | 11 | 16,92 |
| Disruption of the menstrual cycle | 2 | 5,71 | 12 | 18,46 |
| Dyspareunia | 1 | 2,86 | 7 | 10,77 |
| Sexual dysfunction | 3 | 8,57 | 10 | 15,38 |
| Bacterial vaginosis, vaginitis | 2 | 5,71 | 12 | 18,46 |

According to the results obtained, chronic pelvic pain syndrome was observed in 16.92% of women in the comparison group. The intensity of the pain syndrome was mainly associated with the phases of the menstrual cycle - pain intensified on the eve of menstruation and decreased after. It was noted that there was no chronic pelvic pain syndrome in the study group where the rehabilitation measures were carried out. Also, within a year after the cesarean section, 5.71% of women in the main group and 18.46% of women in the comparison group noted menstrual irregularities. As noted above, we also attributed painful sexual intercourse to the main clinical symptoms (in 2.86% of women in the main group and 10.77% of women in the comparison group) and sexual dysfunction in the form of decreased libido (in 8.57 % of women in the main group and 15.38% of women in the comparison group).

A very important aspect of the problem under study is the violation of the microbiocenosis of the genital tract, usually in the form of bacterial vaginosis, vaginitis. In the examined patients, the level of these disorders within 2 years after the cesarean section was 18.46% among women in the comparison group, while in the study group after rehabilitation measures (attending a full course) there were any violations of the genital tract microbiocenosis within 2 years after there were no cesarean sections. In 2 (5.71%) examined patients of the study group, violations of the microbiocenosis of the genital tract were revealed, which we

associate, among other things, with the incomplete completion of the rehabilitation course by the patients.

Due to the high level of chronic inflammatory processes of the genitals, we considered it appropriate to assess the main indicators of the genital tract microbiocenosis. Significant differences between the study group and the comparison group were in terms of the number of Lactobacillus spp. (study group - 6.2 ± 0.1 CFU / ml; comparison group - 4.0 ± 0.2 CFU / ml; $p < 0.05$); Bifidobacterium spp. (study group - 4.3 ± 0.2 CFU / ml; comparison group - 3.1 ± 0.2 CFU / ml; $p < 0.05$); Enterococcus spp. (study group - 3.7 ± 0.2 CFU / ml; comparison group - 5.2 ± 0.3 CFU / ml; $p < 0.05$); S. aureus (study group - 3.8 ± 0.3 CFU / ml; comparison group - 5.3 ± 0.2 CFU / ml; $p < 0.05$) I Candida spp. (study group - 3.1 ± 0.2 CFU / ml; comparison group - 4.4 ± 0.3 CFU / ml; $p < 0.05$). The picture of a normal biocenosis was observed in 94.29% of women in the study group and 60.0% of women in the comparison group, 5.71% and 40.0%, respectively, had bacterial vaginosis with a decrease in the number of lactobacilli, an increase in opportunistic and pathogenic microflora.

So, as evidenced by the results of microbiological studies, patients after cesarean section without timely rehabilitation measures have significant changes in the composition of microflora, manifested by suppression of lactoflora, which ensures colonization resistance. Against this background, there is an expansion of the spectrum and an increase in the number of opportunistic microflora. Although the microscopic picture of vaginal discharge is characterized by a relative increase in the microbial pattern, bacteriological examination reveals a significant number of associations of microorganisms, especially their anaerobic representatives. Such a microbiological picture poses a threat to a woman's reproductive health. In this regard, it is advisable to conduct not only a bacterioscopic but also a detailed bacteriological study, which makes it possible to identify potential pathogens. Since such changes in the microecology of the vagina pose a serious threat to the onset of pregnancy, there is a need for their timely correction.

At the first stage, we carried out a comparative assessment of the state of the postoperative scar in women who had undergone cesarean section included in the sample of this study. In all 100 cases, the studies were carried out at 36-38 weeks of gestation, at which the condition of the scar can be assessed most reliably. It was found that the tissue of the uterus in the scar area has less elasticity compared to other parts of the uterus both in the early postoperative period and one year after delivery. The decrease in elasticity is especially noticeable on the 4th day after the cesarean section. Another feature is that the low elasticity of the scar is combined with the higher elasticity of the nearby parts of the uterus (both above (the anterior wall of the uterus) and below (cervix) of the scar). The thickness of the scar 2.5-3.0 mm, the absence of pronounced deformity in the area of the scar on the uterus, its uniformity, the presence of loci of blood flow, and the absence of placentation in the area of the lower segment of the uterus were the main echographic criteria for choosing the method of delivery in pregnant women of the main study group. So, according to the results presented in table 5, the following can be noted.

Table 5

Comparative assessment of the postoperative scar in women who underwent cesarean section

| Indicator of the usefulness of the scar on the uterus | Study group (n=35) | | Comparison group (n=65) | | Total | |
|---|--------------------|-------|-------------------------|-------|--------|------|
| | Qty | % | Qty | % | КОЛ-ВО | % |
| Complete scars | 33 | 94,29 | 51 | 78,46 | 84 | 84,0 |
| Defective scars | 2 | 5,71 | 14 | 21,54 | 16 | 16,0 |

The presence of a full-fledged scar on the uterus (which morphologically corresponds to the almost normal myometrium of the lower segment) leads to a significant decrease in obstetric and perinatal losses. The rationale for the possibility of conservative delivery in a strictly selected group of women after a cesarean section is full-fledged morphofunctional healing of the transversely dissected lower segment of the uterus.

Thus, full-fledged scars on the uterus, identified in 33 (94.29%) women in the study group and 51 (78.46%) women from the control group, according to the diagnosis, were represented by young connective tissue rich in various fibroblastic elements located among the congenital capillaries and small vessels adequate scars on the uterus revealed in 2 (5.71%) women in the study group and 14 (21.54%) women in the control group were characterized by the presence of atrophy and thinning with the formation of a thin fibrous film covering the defect in the uterine wall. The main ultrasound criteria in pregnant women with incompetent sutures (scars on the uterus) after CS were deformation of the uterine cavity in the suture area, the presence of local retraction, and visualization of a "niche" in the area of the postoperative scar.

During pregnancy, physiological changes in the hemostasis system occur in a woman's body, associated with the appearance of the uteroplacental circle of blood circulation. As the gestational age progresses, changes occur in all parts of the blood coagulation system aimed at preparing a woman for possible complications during pregnancy, childbirth, and the early postpartum period. Changes in general hemodynamics in the body of a pregnant woman play an important role in the activation of the hemostasis system. With a physiologically ongoing pregnancy, changes in the hemostatic system are proportional to the gestational age. These changes are physiological adaptation and have two main functions - maintaining the normal functioning of the fetoplacental complex and stopping bleeding from the placental site after placental separation.

Indicators of the state of hemostasis in pregnant women of the study group and the comparison group at 36 weeks, we did not reveal significant differences in the state of hemostasis between pregnant women of the study group and the comparison group (except for the concentration of hemoglobin and leukocytes). The presence of a decrease in blood hemoglobin below the normal range (the average in the group is 9.1 ± 1.24 g / dl) was noted among 20% of pregnant women in the comparison group. A lower level of leukocyte count was revealed (the average in the group was $5.89 \pm 1.31 \times 10^3$ / mm³) among 8.57% of pregnant women in the comparison group. This may be due to their inadequate nutrition when the body does not receive enough nutrients, trace elements, and vitamins.

The indicators of the chemical components of the blood of pregnant women are presented in Table 6. We did not reveal significant differences in the indicators of blood biochemistry between the pregnant women of the study group and the comparison group. A lower level of copper content (average in the group 128.5 ± 1.74 µg / dl) was found among pregnant women in the comparison group.

In the comparison group among pregnant women, according to the results of an immunohistochemical study, a decrease in the expression of magnesium channels was revealed, leading to an increase in the activity of matrix metalloproteinases (MMP), which, against the background of a decrease in the activity of their tissue inhibitors (TIMP), leads to an increase in the processes of degradation of the extracellular matrix (ECM).

Table 6

The results of a general blood test in pregnant women in the study group and the comparison group at 36 weeks

| Indicators | The norm for pregnant women | Study group (n = 35) | Comparison group (n = 65) |
|----------------------|-----------------------------|----------------------|---------------------------|
| Total protein, g / l | 62-83 | 77,2±1,4 | 74,3±1,1 |

| | | | |
|-------------------------|------------|-------------|--------------|
| Albumin, g L | 25,6-66,1 | 38,4±2,5 | 36,5±2,1 |
| Urea, mmol | 2,5-6,3 | 3,5±0,2 | 3,4±0,3 |
| Creatinine, μmol L | 32-47 | 38,1±1,7 | 39,2±1,5 |
| Cholesterol, mmol L | 6,16-13,72 | 10,2±1,4 | 11,3±1,7 |
| Glucose, mmol L | 3,89-5,83 | 4,8±1,1 | 5,0±1,3 |
| Total bilirubin, μmol L | 3,4-21,6 | 18,5±2,4 | 19,4±1,3 |
| ALT, Unit l | до 31 | 30,1±1,2 | 29,3±1,4 |
| ACT, Unit l | до 30 | 28,4±1,3 | 29,7±1,6 |
| Sodium, mmol l | 135-155 | 138,5±4,1 | 140,2±5,7 |
| Potassium, mmol L | 3,4-5,3 | 3,8±0,5 | 4,0±0,5 |
| Chlorine, mmol l | 98-107 | 99,2±1,4 | 100,5±1,6 |
| Calcium, mmol L | 2,2-2,55 | 2,3±0,4 | 2,4±0,3 |
| Magnesium, mmol l | 0,85-1,4 | 0,97±0,1 | 0,99±0,2 |
| Phosphorus, mmol L | 0,87-1,47 | 0,94±0,3 | 0,99±0,4 |
| Iron, μmol L | 7,2-25,9 | 18,33±2,4 | 19,5±2,8 |
| Copper (μg / dl) | 130 | 133,12±1,54 | 128,5±1,74↓* |
| Vitamin B12 (pg / ml) | 99-526 | 112,55±4,7 | 105,25±3,8 |

Note * statistically significant difference at the level > 0.001

On the uterus, there was a pronounced expression of MMP-1.9 on the vessels, SMC, decidual tissue. In the absence of changes in the expression level of MMP-1 and MMP-9, we found a decrease in the expression of their inhibitor TIMP-1,2, which indicates an imbalance in the process of cleavage and lysis of collagen fibers.

In the study group, against the background of normal expression of magnesium channels, there is a balanced and unidirectional increase in MMP-9 and TIMP-1, leading to a more complete course of repair processes. Expression of MMP-1 and MMP-9 in both subgroups was on the vessels and SMC. The expression of TIMP-1 was observed only in 20% of patients from the study group and was found on SMC (1 point), while in the comparison group, the expression of this antigen on SMC was 2 points. TIMP-2 was not expressed.

When comparing the mean values, we found a significant ($p = 0.01$) difference between the main group and the comparison group after the rehabilitation measures. So, if in the study group the average concentration of MMP-9 before the rehabilitation measures was 322.28 ± 34.5 ng/ml, then after they were carried out during repeated pregnancy, the average concentration of MMP-9 decreased significantly and amounted to $164.12 \pm 6, 25$ ng / ml.

Thus, we can note an improvement in MMP-9 concentration indicators among women who have completed a full course of rehabilitation measures after CS.

In the comparison group, after the CS, the average concentration of MMP-9 was 328.22 ± 17.5 ng/ml, and during repeated pregnancy - 363.1 ± 48.4 ng/ml. The data obtained allow us to classify MMP-9 as a serum predictor of the choice of delivery method.

The mode of delivery was determined based on a detailed study of the anamnesis (information about the previous operation, the course of the postoperative period, the presence of abortions), analysis of the course of the present pregnancy, clinical and echographic data of the scar on the uterus, the intrauterine state of the fetus, desire and voluntary informed consent of the woman. Considering all of the above, in the patients of the study group in 5.71% of cases and the patients of the comparison group in 21.54% of cases, the indications for reoperation were inconsistency of the scar on the uterus according to clinical and microscopic signs. In other cases, among the patients of the comparison group, the indication for repeated CS was placenta previa, premature detachment of the normally located placenta, refusal to give birth through the vaginal genital tract, a scar on the uterus, and an anatomically narrow pelvis. Emergency surgery was performed in 2 (5.71%) patients in the study group and 16 (24.62%) patients in the comparison group, in the planned - in 8.57% of cases in the study group and 75.38% of cases in the comparison group (by KS). So, on an emergency basis, 15 out of 16 women were operated on with a defective scar on the uterus, one woman with placenta previa (bleeding suddenly began), and one woman with a premature detachment of the normally located placenta. The threat of uterine rupture occurred in 7 out of 16 (22.6%) women with an incomplete scar on the uterus.

After the analysis of the technical features and complications that arose when performing a repeated cesarean section among women in the comparison group, we received the following data. In 21.54% of patients, when entering the abdominal cavity, an adhesive process was found, in 7.69% of cases it was pronounced, and in 1.54% of the patient, a corporal cesarean section was performed due to the lack of access to the lower segment of the uterus. The presence of an adhesive process contributed to the prolonged entry into the abdominal cavity and difficult extraction of the fetus. Hypotonic bleeding during reoperation was noted in 4.62% of women, in 3.08% of cases, the incision in the uterus during the removal of the fetal head continued longitudinally to the lower segment of the uterus, which was accompanied by bleeding and the need for additional hemostasis. Blood loss during repeated abdominal delivery, on average, was 740.0 ± 60.0 ml ($p < 0.05$). Thus, the incidence of intraoperative complications of varying severity during repeated cesarean section was 17.0%.

The second group of the studied patients consisted of women with a scar on the uterus, born through the natural birth canal - 30 women in the study group (85.71%). In addition to the patient's consent, the main criteria for managing labor through the vaginal birth canal were:

- clinical and echographic criteria for the usefulness of the scar- satisfactory condition of the mother and fetus
- the absence of absolute contraindications for childbirth through the natural birth canal.

All deliveries in women with a scar on the uterus were carried out by an experienced obstetrician, in the presence of an anesthesiologist, with a deployed operating room, under cardio monitoring control over the state of the fetus and hystero-graphic control over the nature of the uterine contractile activity. The frequency of using regional anesthesia in women in this group was 16.92%.

When analyzing the course of labor, it was revealed that in every tenth woman in labor (8.57%) labor was complicated by the weakness of labor, which in almost all cases required

the use of uterotonics. Untimely rupture of amniotic fluid was observed in every fifth patient (20%), of which the majority - early rupture of amniotic fluid.

We paid special attention to the course of the postpartum period in the patients of the studied groups. With the daily observation of women in labor, we found out the nature of complaints, assessed the general condition, measured the pulse, blood pressure, body temperature, assessed the state of the uterus, mammary glands, followed the nature of discharge from the genital tract and physiological functions.

Of the most frequent complaints presented by women in labor in both study groups, there were the following: 85.71% of women in labor in group 1 and 75.38% in group 2, noted general weakness, fatigue after delivery. Pain in the postoperative wound area disturbed the overwhelming number of patients of the second group - 87.69% after abdominal delivery, pain in the perineal region, especially after episiotomy (during vaginal delivery) was noted in 20% of women in labor. Often there were complaints of painful hemorrhoids, nipple cracks. In the normal course of the postpartum period, a short-term subfebrile temperature is possible, due to dehydration, fleeting bacteremia, and the ingestion of foreign proteins of the fetus into the blood. After giving birth through the vaginal birth canal, the temperature, as a rule, normalizes on its own within the first day, which was noted in 94.29% of women in labor in the study group, while after cesarean section, an independent decrease in temperature was noted only in 24.62% of women. Considering the re-entry into the abdominal cavity, the duration of the operation, high intraoperative blood loss, in 18.46% of the patients of the comparison group, subfebrile conditions were observed up to 3 days, and in 7.69% there was resorption fever, while in all the women in labor in the study group the body temperature was normal throughout the postpartum period.

On the first day of the postpartum period, the decrease in the number of erythrocytes, and the level of hemoglobin was a little noticeable in both groups. The main differences in the indices of red blood were noted up to 5 days of the postpartum period. As studies have shown, in a detailed analysis in patients of the comparison group, mild anemia occurred in 53.85% of cases, while in the study group it was observed in 20% of women in labor. Moderate anemia occurred in 7.69% and 5.71% of patients in the study groups, respectively. In 1.54% of cases in patients of the group, the comparison was severe anemia, which required blood transfusion. So, in the patients in the comparison group, grade I-II anemia was 2 times more common than in women in labor in the study group, which is associated with high intraoperative blood loss during a second cesarean section, compared with physiological blood loss during spontaneous childbirth. In patients of the comparison group, red blood counts within the normal range were observed in 24.62% of women in labor and 51.43% in the study group. Thus, in patients who gave birth by cesarean section, the incidence of anemia is almost 2.5 times higher than in women in labor in the study group, which significantly attracts the development of an infectious process, increases the risk of purulent-septic complications, and impairs the reparative capacity of tissues.

The involution of the postpartum uterus is influenced by the characteristics of the course of labor, the state of lactation function in a woman in labor, the presence and nature of surgery on the uterus. In the comparison group of the studied patients, normal involution of the uterus was noted in 87.69% of women in labor, in the study group - in 94.29%. Subinvolution of the uterus in the comparison group was found in 12.31% of women and 5.71% in the study group. In a detailed analysis in patients with subinvolution of the uterus, it was found that this complication occurred in women in labor in both study groups in the presence of hematometra and tachometers, that is, there was a combination of 2-3 nosological forms. In the comparison group, only 1 woman in labor (1.54%) had the postpartum period complicated by endometritis. The diagnosis was established based on the clinical picture, laboratory data, instrumental and pathomorphological studies. In comparison, there were no

cases of postpartum endometritis in the study group. Thus, the data obtained indicate that after repeated abdominal delivery, a more complicated course of the postpartum period is observed, especially with a higher level of uterine subinvolution, hemato-, and goniometers. Whereas, after the rehabilitation measures, vaginal delivery showed more effective results and gave a lower percentage of complications.

4. CONCLUSIONS

In the course of the study, we found that the frequency of cesarean sections has been steadily increasing in recent years, which increases the rates of maternal mortality, perinatal complications and leads to repeated surgical deliveries in almost all women, which determines the relevance of the topic of the chosen study. The duration of the period after the cesarean section in the study group before the second pregnancy is on average 3.3 ± 1.4 years. The mode of delivery was determined based on a detailed study of the anamnesis (information about the previous operation, the course of the postoperative period, the presence of abortions), analysis of the course of the present pregnancy, clinical and echographic data of the scar on the uterus, the intrauterine state of the fetus, desire and voluntary informed consent of the woman. Rehabilitation of women in the main group began immediately after CS on the 4th day, 2 times a day for 15 days, women received a second rehabilitation course 6 months after CS, 2 times a day for 15 days. After repeated CS, a more complicated course of the postpartum period was noted, especially with a higher level of uterine subinvolution, hemato-, and tachometers. Whereas, after the rehabilitation measures, vaginal delivery showed more effective results and gave a lower percentage of complications.

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