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OPTIMAL METHODS OF DELIVERY IN PREGNANT WOMEN WITH ONE UTERINE SCAR

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ABSTRACT

The purpose of the study was development of optimal delivery tactics for women with a uterine scar. 103 pregnant women and the outcomes of their births were studied. Research and scientific work were carried out for 2020-2022. on the basis of the obstetric department of the multidisciplinary clinic of SamSMU. The optimal delivery tactics directly depend on the presence of somatic pathology, the timing of pregnancy, clinical signs of correction of the postoperative scar, ultrasound data, the level of type XXVI collagen and rehabilitation measures after cesarean section.

KEYWORDS

Viability criteria, uterine scar, cesarean section (CS), type XXVI collagen, child birth.

INTRODUCTION

CS often has a certain impact on the subsequent reproductive activity of women: infertility, miscarriage, spontaneous abortion, menstrual irregularities. In addition, a CS cannot always ensure the birth of a healthy child. Thus, in late pregnancy, infectious

diseases of the mother, severe hypoxia, and especially in cases of very early premature birth, the health of the unborn child depends on many factors. Although CS for preterm birth reduces perinatal mortality, it does not affect the incidence of perinatal morbidity, especially in

children born with low and very low birth weight. The health of children born before the 32nd week of pregnancy is often associated with underlying maternal diseases (extragenital, infectious diseases, etc.), as well as pregnancy complications (severe gestosis, premature separation of a normally located placenta).

The scar on the uterus, in turn, determines the characteristics of the subsequent period of pregnancy, which is often expressed in the risk of miscarriage, placental insufficiency, and malposition of the fetus. In addition, in women with uterine scars, there was a delay in intrauterine growth and fetal development due to placental insufficiency (O. V. Gorbunova, 2004; E. V. Bolvacheva, 2007). In this regard, the issues of pregnancy and childbirth in women with uterine scars are very relevant.

According to the literature, from 13.0 to 50.0% of women can be individually recommended to give birth through the birth canal after cesarean section (L.S. Logutova, 2006; Oden M., 2006). The frequency of favorable outcomes of vaginal birth after CS is much higher, although the data is variable and ranges from 80.0 to 90.0% of women with a uterine scar (L. S. Logutova, 2006; M. Oden, 2009). At the same time, the issue of natural delivery of women with a uterine scar has not yet been fully studied. Risk factors and

management tactics for women with uterine scars are not well developed. Therefore, it is necessary to develop methods for studying the condition of women with a uterine scar, tactics for managing pregnancy and childbirth, as well as improving the prevention of complications and their prediction.

Purpose of work. Development of optimal delivery tactics for women with a uterine scar.

Materials and methods. The study is based on a clinical and laboratory examination of 103 women of reproductive age with a history of one uterine scar, who were under observation in the department of obstetrics and gynecology of the multidisciplinary clinic of Samarkand State Medical University for the period from 2020 to 2022.

During clinical and laboratory examination, pregnant women were divided into 2 groups: Group I - with a stable scar (n=66), Group II with an incompetent scar (n=37). Each of these groups was divided into subgroups according to birth outcomes: "A" - with natural birth, "B" - birth by cesarean section. Also, 68 postpartum women were included in the main group for rehabilitation, and the remaining 35 were included in the comparison group for clinical assessment of the condition of the scar in the postoperative period and rehabilitation.

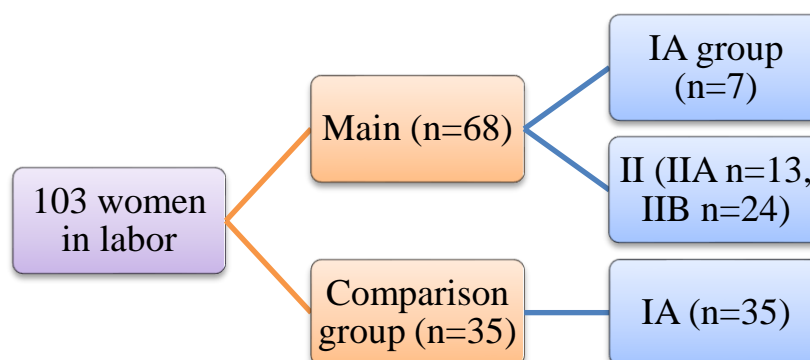


Figure 1. Distribution of postpartum women by rehabilitation method

The work used general clinical research methods (general blood and urine analysis, vaginal smear, assessment of hemostasis), as well as special research methods, including: laboratory research methods (determining the amount of type XXVI collagen by ELISA, morphological examination of the scar area), instrumental methods (ultrasound, Dopplerometry of uterine vessels).

Variation-statistical processing of the study results was carried out using the Statistica 6.0 program, determining the main indicators of variation: mean value (M), mean errors (m), standard deviation (p). The reliability of the results obtained was determined using the Student's test. The difference between two means is considered significant if the p-parameter is less than 0.05. The confidence level was at least 95%.

Results. Information about the indications for the first CS operation, important when assessing the possibility of vaginal delivery, among which two main ones

predominated: anomalies of labor that are not amenable to drug correction (42.64% in the main group and 42.85% in the comparison group) and progressive intrauterine fetal hypoxia (29.41% and 25.71%, respectively).

At the same time, in the postoperative period, a high frequency of various complications was noted (Table 1) - they were detected in 17 (25%) women in the main group and in 4 (11.42%) women in the comparison group. Violation of uterine contractility was noted in 7.35% of cases in the main group and in 5.7% of cases in the comparison group. Wound infection was detected in 10.29% and postoperative endometritis in 10.29% of cases in the main group. In the comparison group, endometritis was not detected, but in the main group this complication was detected in 10.6% of cases. Our data indicate a significant percentage of purulent-septic postpartum complications (13.59% of all examined women of both groups).

Based on a comparative analysis of the two groups, it can be said that the aggravation of the postoperative period contributes to poor healing of the scar area and,

with an intergravid period of less than two years, leads to uterine incompetence in the scar area.

1- table

Information about the postoperative period (abs., %)

Complications after surgery	Main group (n=68)		Comparison group (n=35)		P
	abs	%	abs	%	
Wound surface infection	5	7.35	2	5.70	<0,01
Endometritis	7	10.29	-	-	=0,00..
Violation of uterine contractility (hypotonia, atony)	5	7.35	2	5.70	<0,02

Our observations confirm the literature data that among postpartum complications, purulent-inflammatory ones take first place; when compared, complications after surgical delivery predominate, which once again emphasizes the importance of natural childbirth.

When assessing long-term complications of a cesarean section, the main clinical signs were analyzed: pain, menstrual irregularities, dyspareunia, sexual dysfunction, changes in the microbiocenosis of the reproductive tract (Fig. 2).

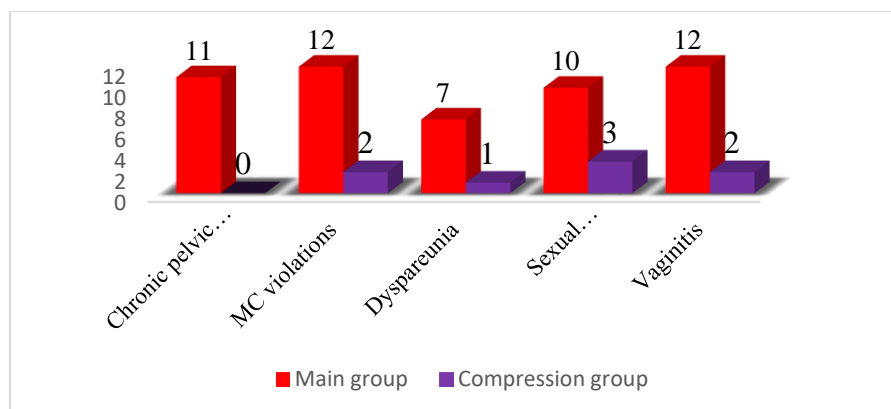


Figure 2. Analysis of long-term complications after the first cesarean section in the examined women (abs.)

As can be seen from Figure 2, chronic pelvic pain syndrome was observed in 16.17% of women in the main group. The intensity of the pain syndrome was predominantly associated with the phases of the menstrual cycle - the pain intensified on the eve of menstruation and then subsided. Also, 17.64% of women in the main group and 5.71% of women in the comparison group complained of menstrual irregularities within a year after cesarean section. As mentioned above, the main clinical symptoms, sexual dysfunction in the form of painful sexual intercourse and decreased libido, were found in 14.7% of pregnant women in the main group and in 8.57% of the comparison group.

When analyzing the level of somatic pathology in both groups, we did not find significant differences in all forms and types of pathologies. Noteworthy is the significant incidence of diseases of the urinary system (17.64% in the main group and 17.14% in the comparison group) and gastrointestinal tract (16.17% and 20%, respectively). In some cases, chronic diseases of the upper respiratory tract and varicose veins of the legs were noted (7.35% and 8.57%, respectively).

At the same time, the presence of somatic pathology, including inflammatory origin, significantly affects the clinical picture of pregnancy, childbirth and the postpartum period.

In the main group, 20.5% of pregnant women showed a decrease in blood hemoglobin levels from normal (91.1 ± 1.24 g/l on average for the group). A low level of leukocytes was detected in 8.82% of pregnant women in the main group (group average $5.89 \pm 1.31 \times 10^3 / \text{mm}^3$). This phenomenon is associated with their poor nutrition and complications during pregnancy in the form of vomiting of pregnancy, observed at the beginning of pregnancy, since the body did not receive enough nutrients, trace elements and vitamins.

After the first CS, the average levels of collagen type XXVI did not differ in both groups during the second pregnancy, but after delivery its indicator showed significant changes in the two groups. Thus, in the comparison group, the average concentration of type XXVI collagen was 322.28 ± 34.5 ng/ml; upon re-examination 3 months after birth, a significant decrease in the average concentration of type XXVI collagen was noted, which amounted to 164.12 ± 6.25 ng/ml.

The average concentration of type XXVI collagen in the main group during pregnancy was 328.22 ± 17.5 ng/ml, and 3 months after birth - 363.1 ± 48.4 ng/ml. This indicates the effectiveness of rehabilitation procedures. The data obtained show that collagen type XXVI can be taken as a predictor of the choice of method of delivery.

In women in labor with a uterine scar, childbirth is often complicated by DRPO (81.81%), secondary weakness of labor (9.09%), and PONRP (10.6%). In the main group, 35.29% (24) of postpartum women with a uterine scar were operated on due to uterine incompetence, 1.47% (1) due to placenta previa, 10.29% (7) due to PONRP, 24.24% based on the sum of relative readings. Among postpartum women of the main group with a risk of uterine rupture (II B subgroup n=24), it was noted that in 7 (10.29% of the total number) during CS there was an incomplete uterine rupture along the scar and in 25% (17) cases there was thinning of the scar. 20 women gave birth naturally (7 from IA and 13 from IIA); it should be noted that postpartum complications more often occurred in women from subgroup IIA, who were initially (36-38

weeks) diagnosed with scar failure and surgical delivery was recommended. Bleeding both during childbirth and in the early postpartum period was observed in 34.7% of women.

In subgroups IB and IIB, the uterine scar during CS was excised and subjected to histological examination. During a morphological study of the uterine scar, changes were observed both in the myometrial tissue and in the vessels. When staining the prepared preparations with hematoxylin and eosin dyes, areas of hyperkeratosis were observed in the SSKE (stratified squamous keratinizing epithelium), disruption of the integrity of the SSKE layer, separation of the surface cells, proliferation of randomly located and basal cells in the lamina propria - acanthosis (Fig. 3).

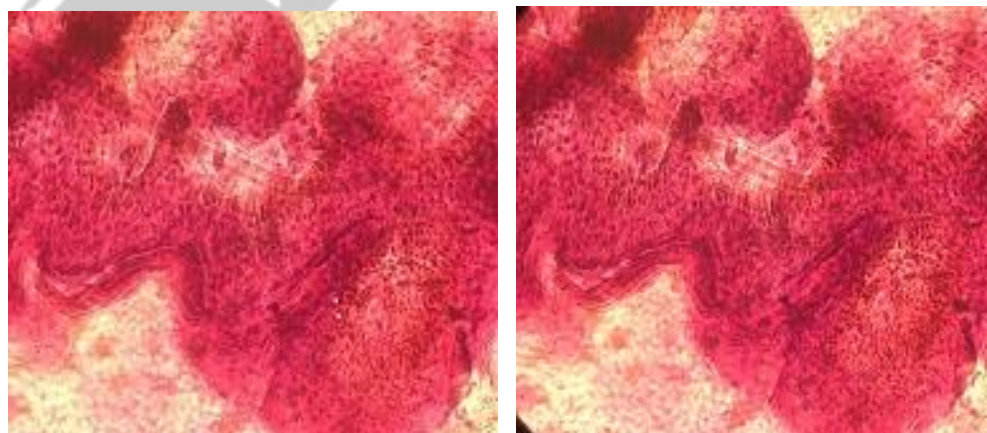


Figure 3. Hyperkeratosis and acanthosis (hemotoxylin-eosin dye, x600), (Patient N.A., 34 years old, No. 1941)

The lamina propria of the uterine scar under SSKE was swollen, there was delamination of fibers, their compression and the formation of large foci of

sclerosis consisting of fibrocytes, myocytes and collagen fibers (muscular fibrous scars) (Fig. 4).

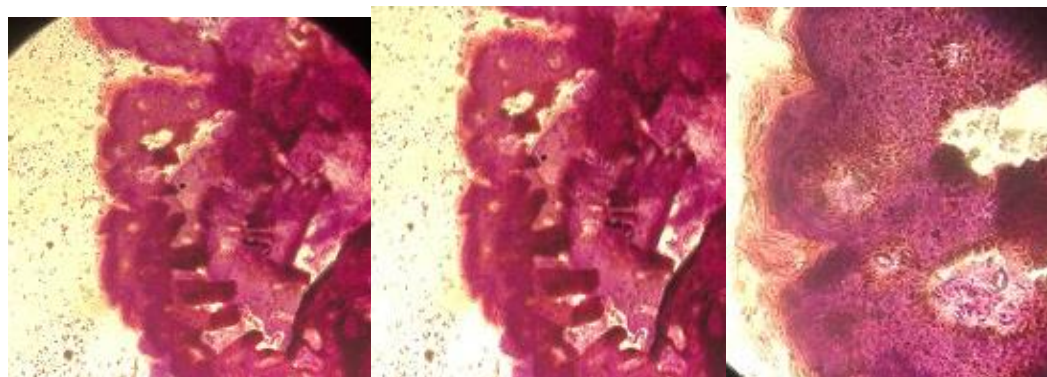


Figure 4. Foci of greater sclerosis (Patient N.A., 34 years old, No. 1941)

Failure of the surgical scar on the uterus was confirmed histologically in 35.29% of the main group (subgroup IIB). Whereas in patients of subgroup IB, the consistency of the scar was histologically confirmed. This fact allows us to judge the effectiveness of using our proposed evaluation criteria to determine the viability of the scar.

Postoperative pain in the wound area bothered the majority (30 out of 48 - 62.5%) of postpartum women. Women who gave birth naturally also noted pain after ruptures (8.82% - 6 main groups and 8.57% - 3 comparison groups) and episiotomy (1.47% - 1 main group and 5.7% - comparison groups).

In puerperas of subgroup IIA, in 15.38% (2) of cases, a low-grade rise in temperature was observed up to 3 days; normalization of temperature was observed in one (8.3%) of them by the 5th day, the second by the

7th day. Subinvolution of the uterus was noted in 5.88% of women in the main group and in 12.31% of women in the comparison group. In a detailed analysis of patients with uterine subinvolution, these complications were characterized by the presence of hematometra and lochiometra. In group II, only one woman (2.7%) had a postpartum period complicated by endometritis.

Thus, the data obtained showed that after repeated abdominal birth, complications of the postpartum period were significantly higher ($p < 0.05$) than after natural birth. It is also necessary to note the effectiveness and high sensitivity of the optimized tactics for diagnosing consistency after a surgical scar, which was confirmed by morphological analysis. Data on the results of childbirth show a high frequency of complications in women with a scar on the uterus, which requires the rehabilitation of these women to

improve their health and restore the reproductive system.

CONCLUSION

The optimal delivery tactics directly depend on the presence of somatic pathology, the timing of pregnancy, clinical signs of correction of the postoperative scar, ultrasound data, the level of type XXVI collagen and rehabilitation measures after cesarean section.

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