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**ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE**

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CRITERIA FOR OPTIMIZING THE EVALUATION OF THE CONSISTENCY OF A POSTOPERATIVE UTERINE SCAR IN WOMEN WHO HAVE UNDERGONE A CAESAREAN SECTION

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✓ Resume

This research focuses on evaluating modern diagnostic methods for assessing the consistency of uterine scars in women who have undergone a Caesarean section. The study examines the degree of scar healing and the effectiveness of various diagnostic tools. The findings facilitate early detection and the selection of appropriate treatment strategies. Based on clinical data, objective examination, ultrasound, Doppler ultrasound, and the amount of type XXVI collagen, the state of the postoperative scar was assessed as competent in 45.5% of pregnant women in the main group and as incompetent in 54.4%. The morphological analysis data confirmed the effectiveness of the proposed criteria for assessing the competence of the postoperative scar.

Keywords: Caesarean section, scar consistency, type XXVI collagen

КРИТЕРИИ ОПТИМИЗАЦИИ ОЦЕНКИ КОНСИСТЕНЦИИ ПОСЛЕОПЕРАЦИОННОГО РУБЦА НА МАТКЕ У ЖЕНЩИН, ПЕРЕНЕСШИХ КЕСАРЕВО СЕЧЕНИЕ

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✓ Резюме

В данном исследовании изучаются современные диагностические методы оценки консистенции рубца на матке у женщин после кесарева сечения. В процессе работы были исследованы степень заживления рубца и эффективность различных диагностических подходов. Полученные результаты способствуют раннему выявлению проблемы и выбору оптимального лечения. На основе клинических данных, объективного осмотра, ультразвукового исследования и Допплерографии, а также уровня коллагена XXVI типа, состояние послеоперационного рубца было оценено как состоятельное у 45,5% беременных женщин в основной группе и как несостоятельное у 54,4%. Данные морфологического анализа подтвердили эффективность предложенных нами критериев для оценки состоятельности послеоперационного рубца.

Ключевые слова. Кесарево сечение, консистенция рубца, коллаген XXVI типа

KESAREVO KESISH O'TKAZGAN AYOLLARDA BACHADONNING OPERATSIYADAN KEYINGI CHANDIQ KONSISTENSIYASINI BAHOLASHNI OPTIMALLASHTIRISH MEZONLARI

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✓ **Rezyume**

Ushbu tadqiqotda kesarevo kesish o'tkazgan ayollarda bachadon jarohatining konsistensiyasini baholash uchun zamonaviy diagnostik usullar tadqiq qilindi. Bu jarayonda jarohatlarning tiklanish darajasi va turli diagnostik vositalarning samaradorligi o'rganildi. Olingan natijalar erta aniqlash va to'g'ri davolashni tanlash imkoniyatini yaratdi. Klinik ma'lumotlar, obyektiv tekshiruv, UZI va Dopler UZI natijalari, shuningdek, XXVI tipli kollagen miqdori asosida asosiy guruhdagi homilador ayollarning 45.5%ida jarohat holati qoniqarli, 54.4%ida esa qoniqarsiz deb baholandi. Morfologik tahlil ma'lumotlari jarohat kompetentligini baholash uchun taklif qilingan mezonlarning samaradorligini tasdiqladi.

Kalit soʻzlar. Kesarevo kesish, jarohat konsistensiyasi, kollagen XXVI tipi

Relevance

The number of caesarean sections is increasing every year all over the world. This is influenced by the rapid development of modern medical science, the improvement of surgical techniques, the emergence of new suture materials and broad-spectrum antibiotics, the improvement of anesthetic care, as well as changes in society's attitude to childbirth. Based on clinical data, objective examination, ultrasound and Doppler ultrasound, as well as the amount of type XXVI collagen, the state of the postoperative scar was assessed as competent in 45.5% of pregnant women in the main group and as incompetent in 54.4%. The morphological analysis data confirmed the effectiveness of the criteria we proposed for assessing the competence of the postoperative scar [1,2,3,4,5].

The number of caesarean sections is increasing every year all over the world. This is influenced by the rapid development of modern medical science, the improvement of surgical techniques, the emergence of new suture materials and broad-spectrum antibiotics, the improvement of anesthetic care, as well as changes in society's attitude to childbirth [6,7].

Cesarean section (CS) is an operative method of delivery that is widely used at the moment. In the search for ways to reduce perinatal and maternal morbidity and mortality, it is very important to determine the place of CS practice. In some cases, this method of delivery is the only way to reduce maternal mortality: premature detachment of a normally located placenta and / or the appearance of signs of its partial detachment, severe hypertensive conditions, including severe preeclampsia and eclampsia, somatic conditions leading to complications during childbirth for the mother through the natural birth canal [8,9,10].

Purpose of the study. Assessment of the condition of the postoperative scar in women who have undergone cesarean section and optimization of delivery tactics.

Materials and methods

In 2020, there were 3,053 births and 971 cesarean sections, accounting for 31.8%. In 2021, both the total number of births and the number of cesarean sections decreased, and the birth rate by cesarean section decreased to 27.8%. In 2022, 3,356 births were recorded, and the cesarean section rate was 29.5%. This may be due to an increase in the number of births and a proportional increase in the number of cesarean sections, but compared to 2020, there is a decrease in the cesarean section rate by 2.3%. According to the study data, at 36-38 weeks pregnant women were divided into 2 groups (Group I - 66 pregnant women with a clinically "solvent" scar, Group II - 37 pregnant women with an insolvent scar), based on the delivery data, each group was divided into 2 subgroups (A - with natural childbirth, B - delivery by cesarean section):

Group I - 66 women with a clinically "solvent" scar on the uterus, admitted on a planned basis, who were divided into 2 subgroups based on the outcome of childbirth:

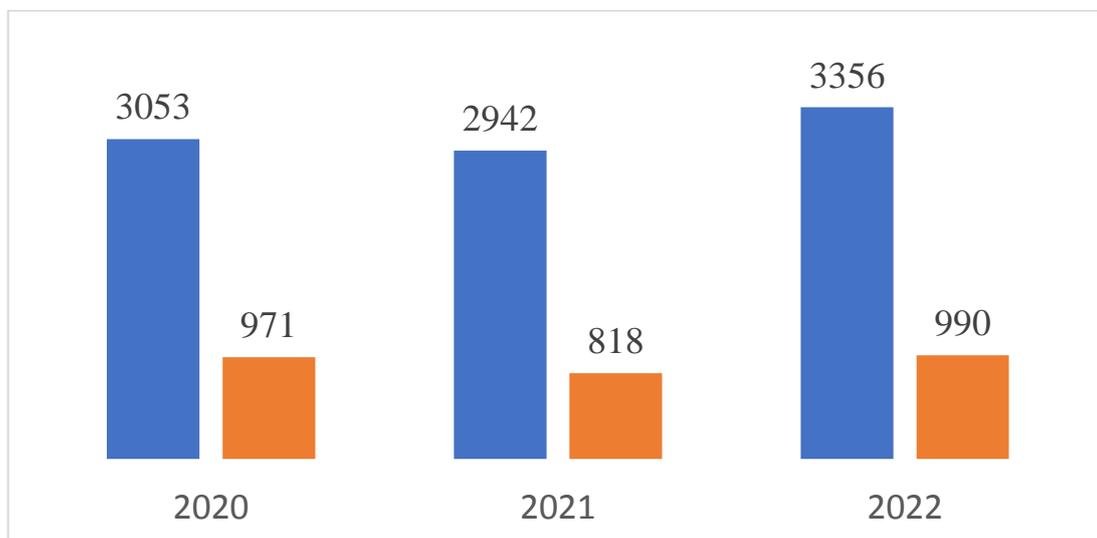
Subgroup IA included 42 pregnant women who gave birth naturally after a full clinical and laboratory examination and the consent of the patients;

Subgroup IB included 24 pregnant women with the same indicators, but who gave birth by cesarean section. These women could have given birth through the natural birth canal, in the presence of a scar on the uterus, but based on the sum of relative indications and taking into account the woman's wishes, a cesarean section was performed.

Group II included 37 pregnant women who were diagnosed with uterine insufficiency and recommended a cesarean section. However, based on the birth outcomes, they were also divided into 2 subgroups:

Subgroup II A included 13 women who were recommended a cesarean section at the time of examination, but refused it and were admitted at 38 weeks or more in the second stage of labor and had a natural delivery;

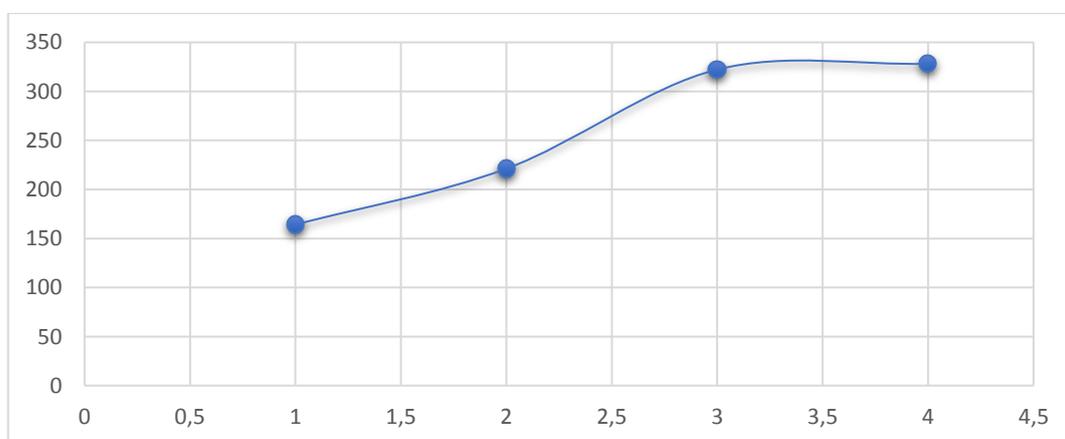
Subgroup II B included 24 women with clinical signs of uterine scar insufficiency who underwent a repeat cesarean operation as recommended.



Picture 1. Number of births and CS in 2020-2022 in the multidisciplinary clinic of Samara State Medical University

Result and discussions

In the main group, all women were prescribed physiotherapeutic treatment in the form of magnetic therapy from the 3rd-4th day after delivery, ultrasound therapy was also prescribed 15 days after delivery and repeated after 6 months. To assess the effect of rehabilitation measures, the clinical data of women, the amount of type XXVI collagen and the state of the scar during ultrasound were assessed dynamically 3 and 6 months after delivery and compared in both groups. During ultrasound 3 months after delivery, the thickness of the uterine wall in the scar area in women in labor in the comparison group was 1.9 ± 0.08 mm (1.6; 4.0), they were diagnosed with scar area defects during Dopplerography, while in the main group the average thickness of the scar area was 2.4 ± 0.04 mm (2.0; 4.0), the scar area was assessed as thin. Six months after delivery, the echographic thickness of the scar area was 3.6 ± 0.03 mm in the main group and 3.2 ± 0.05 mm in the comparison group. As can be seen from Fig. 13, the regeneration of the scar area was positive in the main group during the 6th month, but in the comparison group the regeneration process was slower and showed negative dynamics after 3 months and positive dynamics after 6 months.



Picture 2. Correlation relationship between type XXVI collagen and ultrasound parameters

When studying the amount of collagen type XXVI in dynamics, its sharp change was observed in both groups (Fig. 14). Three months after delivery, the amount of collagen increased from 328.22 ± 17.5 ng/ml to 363.1 ± 48.4 ng/ml in the main group, while in the comparison group its amount decreased by 2 times (from 322.28 ± 34.5 ng/ml to 164.12 ± 16.25 ng/ml). Based on the fact that this type of collagen is specific to the genitals, it can be concluded that in this group it was used to restore the uterus to its original state, which led to a decrease in the overall indicator. In the main group, the local impact of rehabilitation procedures created good conditions for regeneration, improved recovery, had a positive effect on collagen synthesis and prevented its decrease.

Conclusions

1. Based on clinical data, objective examination, ultrasound and Doppler ultrasound, as well as the amount of type XXVI collagen, the state of the postoperative scar was assessed as competent in 45.5% of pregnant women in the main group and as incompetent in 54.4%. The morphological analysis data confirmed the effectiveness of the criteria we proposed for assessing the competence of the postoperative scar.
2. The average concentration of type XXVI collagen in the main group during pregnancy was 328.22 ± 17.5 ng/ml, and after childbirth - 363.1 ± 48.4 ng/ml. In the comparison group, the average concentration of type XXVI collagen was 322.28 ± 34.5 ng/ml, a significant decrease was noted 3 months after childbirth, which was 164.12 ± 6.25 ng/ml. During clinical evaluation of the level of type XXVI collagen, it was found that its increase is reflected in an increase in the ultrasound data of the scar area and has a direct linear correlation relationship (Spearman correlation coefficient $R=0.015$, sensitivity - 83.8%, specificity - 91%).

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