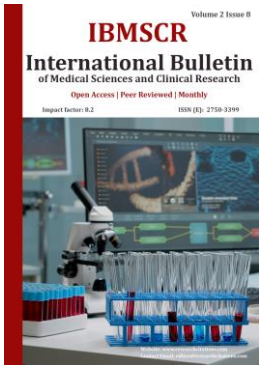

SECONDARY INFERTILITY AFTER CAESAREAN SECTION

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Annotation. Over the past decade, the rate of caesarean section has increased by 25-30% worldwide. The increase in caesarean section requires the study of subsequent changes in the uterus. This article presents the current results of the possibilities of hysteroscopy in the diagnosis and treatment of 30 women after caesarean sections.

Keywords: caesarean section (CS), “Niche” symptom, postoperative scar thinning, infertility, hysteroscopy.

Relevence. A distinctive feature of modern obstetrics is its focus on surgery. During the last decade, the frequency of caesarean section has increased by 25%-30% worldwide. Thus, caesarean section is performed in every fifth pregnant woman (Ye.J Betran, AB Moller 2016). The frequency of this operation in perinatal centers and clinics in our country has reached 15%. In general, 4-8% of women who give birth again have a scar after cesarean section. Therefore, today, the increase in the frequency of cesarean section operations increases the interest in the complications that appear after this operation. (E.H. Martinova, D.M. Nersesyan, A.A. Bubnikovich 2014).

"Niche" symptom is the appearance of an anexogenous cavity of 1 mm or more in the endometrium of the uterus. There are several hypotheses that explain the formation of the "Nisha" scar in the uterus. But until now, its pathogenesis remains unclear. And no specific algorithm for its diagnosis has been developed. Also, the opinions of experts about the need to treat the "Niche" symptom remain controversial (O. N. Nojnitseva, V. F. Bejenar 2020). For the first time in 1961, L. Poidevin noted the presence of a triangular depression in the area of the postoperative scar in the lower segment of the uterus. In the literature, terms such as "niche", "isthmoselle", "sac", "shelf" can be found on the wall of the uterus (O. N Nojnitseva, V. F Bejenar 2020).

In 2019, a group of authors published a study, the purpose of which was to summarize the available information on the definitions, measurements and classification of local thinning of the myometrium [10, 37,49, 56, 78, 82, 118]. 20 leading experts participated in the study. As a result, consensus was reached on 79 controversial issues. The majority of experts (83%) agreed with the term "shelf" and decided that "shelf" should be defined as a depth at the scar site after CC of at least 2 mm depth. Thus, to date, there are many terms that describe changes in the structure of the scar in the form of its local thinning.

The purpose of the research: to improve the diagnosis and treatment of the "niche" symptom that appeared after cesarean section in the uterus using hysteroscopy.

Research materials and methods: Patients were examined at the private clinic "Innova" and obstetric and gynecology department of SamSMU. A total of 30 women were included in the study.

The following examination methods were used during the study: collection of complaints and anamnesis, general clinical examination methods (general blood analysis, general urinalysis, biochemical blood analysis, coagulogram), ultrasound examination, hysteroscopy.

The age of the patients was from 23 to 39 years, the average age was 31.5 ± 4.38 years.

All received materials were subjected to automated statistical processing. Variational-statistical processing of the research results was carried out with the help of "Statistica 6.0" software, determining the main variation indicators: average values (M), average errors (m), standard deviation (p).

The reliability of the obtained results was determined using Student's criterion. A difference between two mean values is considered significant if the p-parameter is less than 0.05. The confidence level was at least 95%.

Research results: 26 patients had only one scar on their uterus - 86.7% (n = 30) (p> 0.05) (figure 1). Only one patient had 3 scars, and the other 3 had 2 scars. It should be noted that in the anamnesis of 3 women with scars, antenatal death was observed, and the fetus was removed by a small cesarean section.

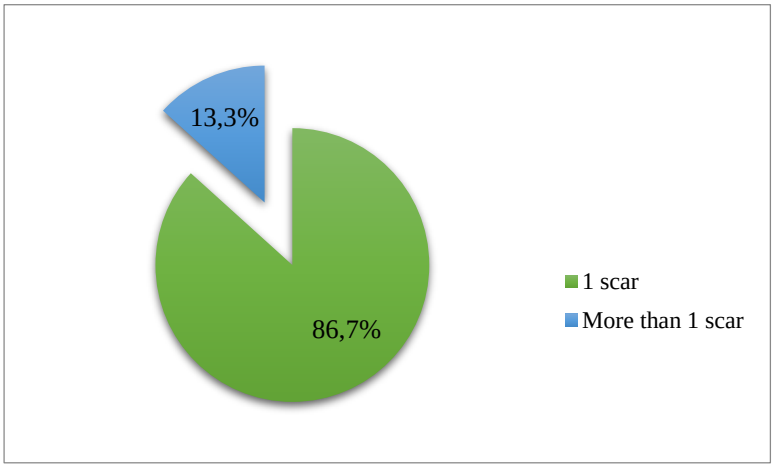

Figure 1. Separation of patients according to the number of scars

In our study, indications for cesarean section were disproportion of pelvis and fetus in most cases (35.0%). The next place was occupied by slow labor and premature migration of the normally located placenta. These indicators are presented in full in

Table 1.

Indications for CK according to the anamnesis of the examined women

№	Instruction	N	%
1	Disproportion of the pelvis and fetal head	12	34,3
2	Premature migration of a normally located placenta	6	17,1
3	Slow labor	8	22,8
4	Severe preeclampsia	6	17,1
5	Incorrect position and appearance of the fetus	5	14,3
6	Pregnancy duration of 41 weeks or more, based on the woman's age, primary infertility and other	6	17,1

	additional factors		

When analyzing patients' complaints, all patients (100%) had secondary infertility. The duration of secondary infertility varied (from 1 to 9 years), on average it was 4.5±1.03 years.

Marriage between relatives was recorded in 3 patients (10%). The pregnancy in these women had many complications and the highest rate of abortions. One of these women also suffered from primary infertility for 6 years. The remaining complaints of the patients were menstrual cycle disorder in 23.3%, increased duration of menstruation in 16.67%, lower abdominal pain in 10%, vaginal discharge in 40%. 100% of patients presented with complaints of secondary infertility.

When studying the anamnesis of women's gynecological diseases, we were sure that many inflammatory diseases are chronic. Exactly 40% of women had symptoms of endometritis, 23.3% had symptoms of endocervicitis, 16.67% had their coexistence, and 10% had salpingo-oophoritis. It was found that 43.3% of women with endometriosis received treatment before changes were noted. Changes in the scar field are difficult to determine from a general survey. But in our observations, in 23.3% of cases, there were pain and unconscious sensations in the area of the scar, which raised doubts about the thinning of the scar.

In our observation, only 4 women had more than one scar. When asked about the period between scars, a woman with 3 scars said that there was a period of 1 year between the first and second scar, and 1.5 years between the second and third scar. Out of 3 women with 2 scars, the period between scars was 2 years in 2, and 1 year in 1. It should be noted that 2 of these women had endometritis after surgery. As risk factors, we can distinguish the short period between scars, the occurrence of complications in the period after surgery.

All women underwent transabdominal and transvaginal ultrasound with a Sonoscape-ay 1000 device (South Korea) with a 3.5 MHz frequency sensor. Uterus dimensions, topographic location, contours, endometrial and myometrial thickness and structure, echogenicity, scar area, and uterine cavity condition were evaluated. In 46.67% of cases, changes in the area of the scar were noted. Local changes, i.e., thinning, were clearly identified only in 26.7% of women.

The formula P = 1 / (1+2.72–(13.34 – 2.93*TR_UST)) was used to predict local thinning in the scar area. Here TR_UST is the thickness of the scar according to the ultrasound result. 18 of the women (60%) showed that local thinning in the area of the scar, i.e., a "shelf" symptom, may occur.

Hysteroscopy was performed on all women on the 9-10th day of the menstrual cycle under general anesthesia using special equipment (with the help of Karl Stors (Germany) apparatus and in accordance with general rules) at the private clinic "Innova" under contract. In aseptic conditions, the cervix is opened through speculums and clamped with the help of pullets. After the cervix is dilated, a hysteroscope is inserted. Cervical canal, uterine cavity, endometrial layer, endocervix, fallopian tubes were inspected. Special attention is paid to the scar after caesarean section.

According to the results of hysteroscopy, pathology of the uterine cavity and iodine body were detected in most women. In 22 of the studied women (73.3%), silk sutures were found inside the uterus and they were removed during hysteroscopy. In addition, deformation of the scar area was observed in all studied women, local thinning of the scar, i.e. "niche" symptom was detected in 24 women (80%). According to its expression, these women can be divided

into two groups. That is, women with clearly expressed signs of "niche" symptoms (8-33.3%) and women with signs of local thinning but not strongly expressed (16-67.7%).

In addition, during hysteroscopy, endometrial micropolyposis (56.67%), chronic endometritis (23.33%), placental polyp (3.33%), Asherman's syndrome (6.67%), ovuli Naboti (16.67%), endometriosis tumor pathologies such as ulcers (10%) were also detected.

If we see the benefits of hysteroscopy on the example of one of our patients, the patient K.N. Infertility, born in 1984, applied with miscarriage even after IVF. When the patient undergoes a complete clinical and laboratory examination. Thinning of the uterus in the area of the scar was detected in UST, while the "Nisha" symptom was also confirmed in hysterosalpingography and hysteroscopy. The following clinical diagnosis was made to the patient: Secondary infertility, "Nisha" symptom, normal miscarriage (after IVF). After that, everything was explained to the patient, and with the consent of the patient and his family, a laparotomy was performed on the patient, the surgery to remove the old scar from the uterus together with "Nisha" was performed under spinal anesthesia.

Conclusion. In general, UST was 26.7%, binary logistic logarithm formula based on UST data was 60%, and hysteroscopy was 80% in determining "Nisha" symptom. The use of hysteroscopy for diagnosis and treatment is its biggest advantage. In addition, we can see from the results that it is more alternative than UST in determining the deformation of the scar area and the "Nisha" symptom.

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