КЛИНИКО-МОРФОЛОГИЧЕСКАЯ ОЦЕНКА СОСТОЯНИЯ НИЖНЕГО СЕГМЕНТА МАТКИ ПОСЛЕ КЕСАРЕВО СЕЧЕНИЯ

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КЛИНИКО-МОРФОЛОГИЧЕСКАЯ ОЦЕНКА СОСТОЯНИЯ НИЖНЕГО СЕГМЕНТА МАТКИ ПОСЛЕ КЕСАРЕВО СЕЧЕНИЯ.ЖКМП.-2023.-Т.4.-№4.-С

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Аннотация: Статья посвящена результатам изучения нижнего сегмента матки после кесарева сечения для выявления причин и риска развития несостоятельного рубца. Обследовано 100 беременных,80 из которых имели в анамнезе кесарево сечение (КС). Данных пациенток, по результатам морфологического исследования, разделили на две подгруппы. Первая подгруппа – 39 пациенток с признаками морфологической неполноценности рубца. Вторая подгруппа – 41 пациентка, у которой отсутствовали выраженные морфологические изменения в миометрии. В результате исследования были выделены факторы риска развития несостоятельности рубца после КС: интервал между операциями менее двух лет; наличие интра- и послеоперационных осложнений после КС, аномалии родовой деятельности среди показаний к первому КС.

Ключевые слова: *Нижний сегмент матки, кесарево сечение, состоятельность послеоперatsionного рубца, морфологическое исследование.*

KESAR KESISHDAN KEYIN BACHADON PASTKI SEGMENTINI KLINIK-MORFOLOGIK BAHOLASH

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Annotatsiya: Maqolada kesar kesish amaliyotidan so‘ng bachadon pastki segmentini shakllanishining klinik va morfologik xususiyatlariga bag‘ishlangan. 100 nafar homilador ayollar tekshirildi. Ulardan 80 nafari anamnezida kesar kesish amaliyoti o‘tkazilgan. Morfologik tekshiruv natijalariga ko‘ra ayollar asosiy guruhi ikkita kichik guruhga bo‘lingan: 1 guruh - chandiq yetishmovchiligining morfologik belgilari bo‘lgan 39 bemordan iborat, 2 guruh – chandik morfologik o‘zgarishlarga ega bo‘lmagan 41 bemordan iborat. Bachadondagi choklarni yetishmovchiligini asosiy omillariga, yallig‘lanishdan tashqari, patologik intraoperativ qon yo‘qotish, tug‘ruqning faol davrida kesar kesish va kesar kesish amaliyotidan keyin yil davomida bachadon ichi aralashuvlarning mavjudligi, bachadonda veziko-bachadon burmasidan 2 sm pastda kesma o‘tkazish, jarrohlik yo‘li bilan kirish sohasida yo‘ldoshning joylashishi, reparatsiya soxasidagi ishemik jarayonlar kiradi.

Kalit so‘zlar: *pastki bachadon segmenti, kesar kesish amaliyoti, bachadonda chandiq yetishmovchiligi.*

CLINICAL-MORPHOLOGICAL ASSESSMENT OF THE LOWER UTERUS SEGMENT AFTER CAESAREAN SECTION

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Annotation: The article is devoted to the results of studying the lower segment of the uterus after cesarean section to identify the causes and risk of developing an incompetent scar. 100 pregnant women were examined, 80 of whom had a history of cesarean section (CS). Based on the results of a morphological study, these patients were divided into two subgroups. The first subgroup included 39 patients with signs of morphological inferiority of the scar. The second subgroup included 41 patients who had no pronounced morphological changes in the myometrium. As a result of the study, risk factors for the development of scar failure after CS were identified: the interval between operations is less than two years; the presence of intra- and postoperative complications after CS, and anomalies of labor among the indications for the first CS.

Keywords: *The lower segment of the uterus, cesarean section, the competence of postoperative scars, morphological study.*

Introduction: Caesarean section is the most common operative delivery method, and its frequency has tripled in the last decade and continues to increase. This leads to an increase in the number of re-pregnant women with a scar on the uterus, in which the birth process is very difficult due to the risk of rupture of the uterus from the scar.

One of the most important factors in determining the method of delivery in such patients is the condition of the uterine scar after cesarean section. A wide range of data from 22 to 50% has been reported by different authors on the lack of uterine scar [8]. Anamnesis information is important, these are: indication for previous operations, methods of its implementation, used technique, suture material, as well as complications of the postoperative period. Clinical manifestations of scar deficiency in the uterus may be insignificant or absent. Only 18.3% of patients had pain during palpation of the lower abdomen [13].

Almost the only non-invasive method during pregnancy is ultrasound examination (UTT), the accuracy of which varies from 57.5 to 83% according to local and foreign researchers [1,2,9, 12]. In the objective assessment of the postoperative scar, all currently used examination methods - clinical, instrumental (ultrasound, hysteroscopy, hysterography), laboratory analyzes help to diagnose the condition of the scar and are of great importance in predicting the upcoming delivery after cesarean section. However, these methods are not without shortcomings, unlike morphological examination, they do not qualitatively confirm the nature of the scar. In the literature, there are many studies devoted to the morphological study of the strength of the uterine scar after cesarean section. V. I. Krasnopolsky et al. [11], A.N. Strijakova, According to V. A. Lebedev [14]. uterine scar deficiency occurs 24.1-31.6% in cases after repeat caesarean section . The main criterion for the complete formation of the scar in the uterus is the predominance of muscle tissue over connective tissue. Morphological characteristics of scar failure include: the presence of irregular fioci of connective tissue in the form of fibrinoid tumors, intramural hematomas, inflammatory infiltrates, and the presence of neoangiogenesis. [7].

There are urgent questions in determining the causes of the scar deficiency in the uterus after cesarean section and the morphological criteria for its evaluation. Therefore, the purpose of this study is to study the clinical morphological characteristics of the lower segment of the uterus after cesarean section, to determine the risk and reasons for the development of scar deficiency.

Materials and methods: 100 pregnant women were examined, 80 of whom had a history of cesarean section surgery, and they were divided into two subgroups according to the results of the morphological study. The first group - 39 patients with a morphological deficiency of the scar, the presence of pathological changes in the connective tissue in the area of the scar, a high degree of disorganization of the muscle tissue, the prevalence of hydropic dystrophy in the myometrium, and a high prevalence of smooth myocytes. The second group - 41 patients without obvious morphological changes in the myometrium. The control group consisted of 20 women who gave birth by caesarean section for the first time.

The thickness and echostructure of the lower segment of the uterus were evaluated by sonography. Echographic signs of uterine lower segment insufficiency include: the thickness of the uterine segment less from 3 mm and more than 8 mm, in the form of a crater thinning of the scar, the presence of hyperechoic inclusions in its intended place [16, 17]. During surgical intervention (CS)from uterine scar a biopsy was taken from the lower segment and 10% formalin fixed in solution, followed by hematoxylin and eosin with painted. In the morphological study of samples, the myometrium is evaluated according to the following criteria: 1.The degree of dispersion of smooth myocytes , the size of connective tissue layers between large and small smooth muscle bundles is determined. 2. The degree of disorganization of the myometrium, which is assessed by the randomness of the location of smooth muscle bundles ; 3. Intensity and prevalence of hydropic (vacuolar) dystrophy. A comparative, semi-quantitative analysis of these indicators was conducted in a 3-point system.

Statistical processing of results using Microsoft Excel spreadsheets and conducted with "biostatistics" (version 4.03) . To distribute identified data to assess the reliability of differences - Manny Whitney, $P \leq 05$ method was selected. Results and discussion. The age of the examined patients ranged from 17 to 42, the average age for the first group 30.5±3.67; for the second group - 29.6±4.57 years and for the control group 25.45±6.04 year ($p>0.05$). 61% in the first group women, 53.6% in 2nd group women and 22.5% of patients in the control group there were chronic somatic diseases. It was found that the incidence of myopia in the studied groups was high.

In the first group, it was found that there was a significant prevalence of varicose veins in the legs. (r<0.05) (Table 1). No significant differences were found in the structure of gynecological diseases, but it should be noted that inflammatory diseases of the genital organs were more often noted in patients with signs of morphological deficiency of the scar. (Table 1). The frequency of endometritis after cesarean section in the anamnesis is 2 times higher in the group with morphological features of scar deficiency than in the 2nd groups. The incidence of intraoperative complications was also relatively higher in the subgroup with scar deficiency.

The main complication during the operation is bleeding, which is caused by the violation of uterine contraction or the expansion of the incision in the lower segment of the uterus (p<0.05), which indirectly indicates the improper formation of the myometrium of the lower segment of the uterus. This requires additional hemostasis and ligature, but this can later lead to disruption of oreparative processes due to tissue ischemia in the wound area. The interval between the previous caesarean section and the current pregnancy is more than 5 years occur 56.2% of patients with uterine scar . The first subgroup 25.6% patients , the interval between operations is 1-2 years, which is significantly more than the group without obvious morphological changes in the myometrium - 4.8% (p<0.05). This corresponds to the data of some researchers [4] and can serve as an indication for operative delivery. Among women with a history of cesarean delivery, one of the most common complications of pregnancy is the risk of miscarriage, which was reported 3 times more often than in the control group (Table 1). The obtained results correspond to the information in the literature, the risk of miscarriage in women with uterine scars is 20-40.9% [6]. Chronic placental insufficiency was found in every fourth woman with uterine scar, while only 2 patients were diagnosed in the control group (Table 1). In the group of pregnant women with a good morphological condition, the degree of maturation of the lower cervical segment at term is significantly higher than in the first subgroup (p < 0.05) (Table 1). These clinical data explain the changes in the architecture of the muscle layer in women of the first group, the sensitivity and ratio of the receptor apparatus is disturbed, which leads to the violation of the maturation of the birth canal [2]. It should be noted that clinical signs of uterine scar deficiency (pain in the scar area on palpation, pain when the fetus moves) were present in 33 (41.2%) women, but scar deficiency during surgery was present in 18 ta (22.5%) was confirmed in women. At the same time, 21 (26.2%) of 39 women with uterine scar deficiency had no clinical signs of scar. The accuracy of the clinical research method was 56.2%, sensitivity - 46.1%, specificity - 65.8%. According to the data of UTT, when most patients reach the term of pregnancy (37-40 weeks), the thickness of the uterine wall in the area of the scar varies from 3 to 5 mm on average, which was taken as a sign of maturity of the scar in the uterus.

Table 1 .
Factors leading to the formation of uterine scar deficiency after cesarean section.

Information	Group of patients with morphological deficiency of uterine scar (n=39)		Group of patients without morphological changes (n=41)		Control group (n=20)	
	Abs.	%	Abs.	%	Abs.	%
I. Somatic diseases						
V aricosis sick gi	8	20.5* ▲	2	4.9*	-	-
Different degrees of myopia	2	5.1*	2	4.9*	3	15.0
II. Gynecological history						
Inflammatory diseases of the genitals	8	25.6* ▲	6	14.6	2	10
Intrauterine device	17	43.5	15	36.5	8	40
III. Complications after the first Caesarean operation						
Bleeding of mixed genesis	4	10.2*	-	-	-	-
Postpartum endometritis	6	15.3* ▲	3	7.5	-	-
IV. The interval between the previous operation and the current pregnancy						
1-2 years	10	25.6* ▲	2	4.8	-	-
3-5 years	6	15.3* ▲	17	41.4	-	-
5 years and more	23	58.9	22	53.6	-	-
V. Complications of current pregnancy						
Risk of miscarriage	17	43.6*	11	26.8	3	15
Chronic placental insufficiency	10	25.6*	11	26.8*	2	10
Intrauterine infection	10	25.6*	9	22*	2	10
VI. Cervical maturity level in full-term pregnancy						
Not eaten	19	48.7	14	34.1	-	-
He wants to eat	15	38.4	10	24.3	-	-
It was eaten	5	12.8	17*	41.4	-	-

Thinning of the scar (less than 3 mm) in 15 (38.4%) patients with morphological signs of scar deficiency in the uterus 12 (29.2%) more were identified in the second group. Acute thinning during cesarean section was confirmed in 8 out of 16 patients in the first group, and in 5 out of 12 in the second group. In another 11 patients with uterine scars without signs of

UTT deficiency , sharp thinning of the lower segment up to 1 mm was detected at the time of surgery. Thus, a parameter such as "scar thickness" has diagnostic significance in only half of patients with uterine scars. When the homogeneity and flatness of the scar were studied using UTT in all sections, uneven thickness of the scar was found in 5 (12.8%) women in the first group and 3 (7.3%) women in the second group. Later, these data were confirmed during cesarean section in 4 (5%) patients. Accuracy of transabdominal ultrasound was 57.5%, sensitivity - 43.5%, specificity - 70.7%. Echoscopic data obtained on the thickness and uniformity of the lower segment are not considered sufficient criteria for the evaluation of the uterine scar.

Correspondence of clinical signs of scar deficiency, UTT data and macroscopic appearance is present in only 8 out of 80 women. Morphological examination of the tissue obtained during repeated cesarean section showed that the histological preparations of 41 (52.2%) patients had mostly typical location of muscle fibers. Between bundles of muscle fibers, loose connective tissue is often found in large areas. In some cases, denser connective tissue was found. 39 (48.7%) patients of the first group had signs of incomplete scar regeneration: atypical, chaotic arrangement of bundles of smooth myocytes, pathological changes in connective tissue. Thus, in the scar field, fibroblast, fibrocyte, lymphocyte, granuloma with macrophage and giant cells of a foreign body. Sometimes they wrap around the rest of the suture material. Hyalinous foci were also detected in the scar area. In some cases, the scars are seen as loose fibroblasts and broad strands of connective tissue with small blood vessels. In other samples, the scar takes the following form: dense fibrous tissue with a large number of macrophages, foreign body giant cells, fibroblasts and lymphocytes, muscle fibers. Between bundles of muscle fibers, rough areas of hyalinized connective tissue were often detected. In some cases, pathological changes mainly affected blood vessels. In such samples of myometrium, sclerotic changes are observed around blood vessels, especially in veins, with the growth of soft connective tissue, in which fibrocytes, fibroblasts, lymphocytes, and loose arrangement of collagen fibers are observed. The presence of lymphocytes indicated the inflammatory nature of these changes. Hydropic (vacuolar) is often observed in smooth myocytes , affecting the outer layer of the myometrium more. It is known that this form of dystrophy is manifested by the appearance of vacuoles filled with fluid associated with disturbances in water-electrolytes and protein metabolism. Swelling and inflammatory changes occur as a result of disruption of cell membrane permeability.

Flooding of smooth myocyte cells leads to destruction and necrosis of organelles. Therefore, the functional activity of such smooth myocytes (contractile and secretory) decreases. In our study, the most pronounced degree of distortion was observed in women with inflammatory diseases of the genitals. Another similar morphological appearance is interstitial swelling, which is manifested by a high degree of separation of smooth myocytes, according to the pathogenesis of vacuolar dystrophy. Undoubtedly, this hydropic dystrophy and interstitial edema in the myometrium are closely related. According to our data, edema can serve as a criterion for scar failure. The rate of smooth myocyte differentiation ($p=0.04$) was higher in the group of women with uterine scar compared to the control group.

In this regard, it is reasonable to assume that interstitial edema and vacuolar dystrophy are directly related to the presence of a scar in the uterus. Yu. Experimental data of V. Grigorev also confirm [5]. Identified morphological changes with a high degree of disorganization of muscle bundles ($p=0.01$) , significant interstitial edema ($p=0.01$) , hydropic dystrophy with increased mechanical stretching of the lower segment associated with the enlargement of the uterus during pregnancy , can lead to labor dyscoordination and predetermine the tactics of delivery with the next Caesarean section.

In fact, the analysis of cases with relatively significant changes in these morphological indicators showed that in 46% of cases, among the indications for the first Caesarean section was the group of labor anomalies.

Thus, according to current research data, matching of morphological, clinical and echographic signs of scar deficiency is observed only in 10% of cases. Only macro and microscopic examination is reliable, which is carried out during and after Caesarean section. According to morphological studies, in addition to the presence of connective tissue remnants in the scar, it can be recommended to use criteria such

as the intensity and spread of vacuolar dystrophy, the degree of irregularity and dispersion of muscle bundles, to diagnose the insufficiency of the lower uterine segment and determine the risk of labor dyscoordination.

Summary: We identified a risk group of women in which scar deficiency is more common: if the interval between operations is less than two years; the presence of complications during the first Caesarean section and after the operation; due date immaturity of the cervix during pregnancy; Among the indications for the first cesarean section is the presence of labor anomalies.

Received results further scientific research and Prospects for the search for methods of strengthening the lower segment of the uterus after cesarean section opens for more information.

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