

## MODERN APPROACHES TO THE MANAGEMENT OF PREGNANT WOMEN WITH UTERINE SCARS AND DELIVERY TACTICS IN THEM

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**Abstract.** *The problem of childbirth in women with a scar on the uterus after previous CK is of great concern and great interest among obstetricians and gynecologists around the world today, because the number of CK operations, including planned operations, is increasing every year. is increasing, but maternal and perinatal mortality is not only not decreasing, but on the contrary, it is increasing [2, 30].*

*According to the literature, about 30% of women plan to become pregnant again after cesarean section. According to the authors, after discharge from the obstetric hospital, each postpartum woman was informed about the instructions for surgery, the duration of labor and the duration of the water-free period before the operation, the method of KK, the type of incision in the uterus, the method of suturing, the suture used. material, complications during surgery, the amount of blood loss and the delay of the postoperative period should be an exchange sheet. This information is necessary for the selection of candidates for subsequent vaginal delivery [14].*

**Keywords:** *natural birth process, fetus, normal pregnancy.*

According to the researchers, doctors should pay attention to the woman's complaints (pain in the scar area, dysfunction of the organs near the uterus, separation from the genitals, etc.), the nature and time of the lactation period, and the condition of the scar on the skin of the abdominal area. In women with a uterine scar, subsequent pregnancy planning is determined based on a comprehensive scar evaluation [33]. However, these issues are poorly covered in information sources. It was found that only 40% of women have full recovery of reproductive function after repeated CK [39].

Given the discrepancy between the data, the factors that determine the complete healing of sutures in the uterus are still unclear. In some women, the complete recovery of the incision occurs with the development of muscle tissue, in some, the development of connective tissue is observed, mainly muscle fibers. Dystrophic processes begin to develop in the scar zone during the time after surgical intervention, which increases the risk of uterine rupture. Morphological signs of uterine scar deficiency are more evident 5 years after surgery [49].

Based on the histological structure of the scars in the uterus after CK, it is recommended to divide the scars into complete and incomplete. A complete scar is a scar that contains small layers of connective tissue with a light infiltration of lymphoid cells. As for irregular scars, they are characterized by tissue fibrosis and hyalinosis, endothelial proliferation, and a marked inflammatory response with significant small cell infiltrates in the scar or nearby tissues [39].

One of the factors of infertility is the postoperative adhesion disease of abdominal organs, which develops in 14% of patients after the first laparotomy and in 96% after the third. In clinical and post-mortem studies of laparotomy patients, the frequency of intra-abdominal adhesions has been shown to be between 55 and 100% [44]. Adhesions are characterized by increased

extracellular matrix formation associated with decreased matrix degradation and decreased fibrinolytic activity [26]. Adhesion formation is the result of impaired interaction between angiogenic, fibrinogenic and fibrinolytic factors [68].

The histopathological structure of adhesions is represented by mononuclear cells, fibroblasts, adipocytes, vascular endothelial cells and collagen fibers [46, 68]. These components of connections are related to each other in a certain ratio. A specific phenotype of fibroblasts in adhesions is also reported in the literature. Compared to normal fibroblasts, they have increased levels of extracellular matrix components such as collagen and fibronectin, matrix metalloproteinase-1, tissue metalloproteinase-1, interleukin (IL)-10, and decreased tissue plasminogen [45].

Compared with normal peritoneal fibroblasts, adherent fibroblasts produce higher basal levels of transforming growth factor-beta-1 (TGF- $\beta$ 1), vascular endothelial growth factor (VEGF), and smooth muscle  $\alpha$ -actin (SM  $\alpha$ A) [32].

On the other hand, the ratio of plasminogen activator/plasminogen activator inhibitor [350–352], type II collagen [54] decreases. In addition, expression of cyclooxygenase and fibroblast adhesion proteins in response to hypoxia indicates an inflammatory response [8]. Type II plays an important role in breaking down connective tissue proteins such as collagen, elastin, proteoglycans and glycoproteins, regulating the function of biologically active molecules, including growth factors, adhesion molecules. In blood plasma and other biological fluids, as well as in various cells and tissues, there are protein inhibitors that selectively block the activity of individual enzymes or groups of enzymes. Such inhibitory systems regulate the activity of peptide hydrolases under physiological conditions and protect proteins from controlled degradation. One of the necessary conditions for the normal course of physiological processes is to maintain a balance between the activity of type II collagen and their inhibitors. The balance between the expression and synthesis of type II collagen is regulated by their main endogenous inhibitors synthesized by connective tissue cells and leukocytes [12].

During the adhesion process, the amount of type II collagen decreases [35]. Thus, surgically induced tissue ischemia enhances the local production of adhesion-promoting factors, namely vascular endothelial growth factor, which is produced by cells to stimulate vasculogenesis [25], Type II collagen is one of the main components of the intercellular substance of connective tissue [60], its activity affects the degradation and expansion of the extracellular matrix and the formation of adhesions [51]. The role of type II collagen in the processes of tissue fibrosis and sclerosis, the participation of this group of enzymes in the pathogenesis of organ sclerosis has been undoubtedly shown by many researchers [46]. First, collagen type II participates in the mechanisms of extracellular matrix protein exchange, controls their degradation intensity through the concentration of specific tissue inhibitors that control mRNA expression, insulin-like growth factor, etc. Secondly, collagen type II participates in the process of tissue sclerosis by activating the transformation of epithelial cells into fibroblasts.

Failure to carry out timely and adequate rehabilitation procedures after CK leads to a low rate of recovery of the incision zone and often causes repeated operative delivery [5, 21, 49, 66]. Despite the availability of modern drugs used in the postoperative period to prevent inflammatory complications, the percentage of repeated CK does not tend to decrease. In this regard, the problem of complete formation of the scar in the uterus is one of the leaders.

As a result of the development of physical rehabilitation as a science, the possibility of using physiotherapy and physical rehabilitation methods in gynecology has increased significantly. Thus, in addition to drug treatment, in the rehabilitation stages and in the postoperative period, the range of physical factors has been significantly expanded. As a result, the necessity and expediency of using physiotherapy, balneological treatments and other methods of physical rehabilitation has increased significantly [16, 60]. The feasibility of physiotherapeutic methods in combination with drugs is that the local application of physical factors improves blood circulation in the female genital organs, accelerates metabolic processes in the affected area, which helps the accumulation and local effect of drugs.

However, it should also be remembered that physiotherapy cannot be used for certain diseases and conditions. There are general contraindications that cannot be used for any physical therapy. It is accompanied by bad quality tumors of any localization, bleeding cases, the general serious condition of the woman, mainly secondary diseases [16]. The use of physical means as soon as possible, their consistent active use at all stages of preventive, therapeutic and rehabilitation measures will lead to complete treatment. In terms of clinical and physiological justification, it is necessary to observe the etiological and pathogenetic basis of the use of therapeutic physical factors. Taking into account the initial functional state of the female body, it is necessary to make sure of the specific effect of the influencing physical factor.

The favorable period of the positive effect of various physiotherapeutic factors on the body is not the same. When studying the long-term results of physiotherapeutic treatment of gynecological patients, it was found that it lasts about 2 months on average. For example, after a full course of mud therapy, the effect time is 6 months [2, 45].

Priority areas for evaluation of uterine scar status

Obstetricians' refusal of conservative delivery after abdominal delivery is mainly due to the fear of the risk of uterine rupture. However, the actual frequency of this complication, according to local data, is only 1.05-2.8%, and the risk of uterine rupture during pregnancy is higher than during childbirth. And this should not stop the doctor from the prospect of childbirth, but should encourage him to complete rehabilitation after the first operation, plan the next pregnancy, consider the optimal time for its onset and diagnose the condition of the scar. Both the doctor and the patient should be well aware that the morbidity of the mother after re-operation is 3-4 times higher than after natural childbirth, the frequency of intraoperative complications with re-CC occurs in every fifth case, which is 5 times higher than the first operation.

Repeated KK is a new serious test. Among the set of factors affecting pregnancy and childbirth in women with a history of CK, the condition of the uterine scar is considered to be of decisive importance. Evaluation of the postoperative scar can be performed outside of pregnancy and during pregnancy, as well as in the period after the first operation. According to the literature, modern methods of cytological examination are used in the examination of postpartum women - smear of the endometrium, aspiration from the uterine cavity, which gives useful information about the restoration of the state of the whole organ immediately after surgery, giving an idea about regeneration. allows to have, which in turn should be the basis for rehabilitation measures [48].

The list of methods for assessing the state of the scar during pregnancy is very limited, and corresponds to echography and dopplerometry [12]. Currently, there is no evidence that the ability to assess the thickness and structure of the uterine scar area using ultrasound is predictive of a

vaginal delivery attempt after a previous CC [61]. However, scientific and practical research on this issue is being actively conducted in world and local publications. Literature information about the possibility of detecting a scar in the uterus during ultrasound examination is very conflicting. In most cases, the appearance of a scar is indicated when scar tissue, local thickening or thinning - "niches", that is, signs of scar deficiency are detected [20]. When the uterine incision site cannot be distinguished from the previous CK on the background of myometrium in the lower segment, it is said about the normal ultrasound image of the lower segment [8]. Most of the research concerns the second half of pregnancy, as early research is considered uninformative. However, echography in the 1st trimester made it possible to identify hypoechoic zones in the isthmus at 14-16 weeks in every second patient, the clinical interpretation of which is still unclear, mostly hypotheses [35].

Practitioners say that in the anamnesis of researchers, focusing only on the condition of the scar on the question of the specific characteristics of childbirth in women with CK significantly slows down the full prognosis of the attempt at childbirth, because the effective contractile activity of the uterus is prevented from the uterine scar. goes out [10].

Studying the condition of the lower segment of the uterus can be considered a "step forward", because today most scars are located in this area. Different authors propose different methods of measuring the thickness of the lower segment of the uterus, because when using different methods of measurement, including the thickness of the bladder mucosa, the thickness of the surrounding tissues, the measurements are significantly influenced by bladder filling. does. Many authors tend to measure the thickness of the myometrium, because in many patients (up to 13.2%) when the main layer of the myometrium is thinned, the thickness of the uterus remains in place of the scar tissue after CK [24]. Some researchers found that the thickness of the lower segment depends on the presence of scar tissue in it: with the increase in the period of physiological pregnancy, the thickness of the lower segment decreases by 2 times (from 7 mm at 6.19 weeks to 3 mm at 39 weeks), and pregnant women with CK in women - decreases more than 3 times (from 6.8 mm at 19 weeks to 2.1 mm at 39 weeks) [12]. According to other data, the thickness of the lower segment at 16-19 weeks is 10.8 mm, at 28-31 weeks - 7 mm, after 35 weeks - "incomplete" if the "lower" scar area is 3 mm or less , up to 5.2 mm - considered "complete" [32]. The authors found an inverse relationship between the number of previous CC operations and the thickness of the lower segment, as well as the thickness of the lower segment and the frequency of uterine rupture [42].

The lower limit of its thickness is 3.5 mm, and the optimal value is 4.5 mm and above, in which uterine rupture almost does not occur [10]. However, the generally accepted idea that thinning of the lower segment of the uterus occurs with sufficient thickness, even in the presence of a complete scar, does not fully explain why the thinning of the lower segment does not always mean its failure [33]. According to the researchers, thinning of the lower segment in pregnant women with a history of CK occurs due to excessive stretching of the area that does not involve the scar, as well as degenerative processes in it [10]. Functional evaluation of the operated uterus, in addition to the thickness of the lower segment, taking into account the symmetry, the deviation to the bladder, the motor activity of the fetus and even the appearance of a wheel-like bulge with changes in uterine pressure against the background of light requires obtaining [12]. There is an opinion that the strength of the scar depends on the development and characteristics of hemodynamic processes in the area of the lower segment and isthmus after surgery [72]. Research

on this issue is incomplete and limited. At the same time, it was found that the formation of the architecture of the vascular system is completed 10-12 months after the operation, which probably justifies the high risk of pregnancy occurring earlier [10].

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