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ХАЛЫҚАРАЛЫҚ ҚАЗАҚ-ТҮРІК УНИВЕРСИТЕТІ

HOCA AHMET YESEVİ
ULUSLARARASI TÜRK-KAZAK ÜNİVERSİTESİ

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Әл-Фарабидің мерейтойы

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Абай Құнанбайұлының мерейтойы

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A MODERN VIEW OF THE OF THE CAESAREAN SECTION (REVIEW)

The problem of caesarean section has medical and economic aspects, is relevant and widely discussed in the literature. In the modern world, caesarean section in frequency of execution surpasse all other abdominal operations. The review considers the reasons for the increase in the frequency of caesarean section and the possibility of reducing these indicators. The methods of anesthesia during caesarean section, the moments of pharmaceutical perioperative support, issues of complications in the postoperative period are described. Examples of successful abdominal delivery with a combined other pathology are given.

Keywords: caesarean section, scar capacity, anesthesia, combined pathology.

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Кесар отасы мәселесіне заманауи көзқарас (шолу)

Туатын баланы кесар отасы арқылы жарып алу мәселесінің медициналық-экономикалық аспектілері бар, ол өзекті және әдебиеттерде кеңінен талқыланады. Қазір әлемде баланы жарып алу операциясының жиілігі бойынша барлық басқа абдоминалды операцияларынан асып түседі. Шолу жасаған кезде баланы жарып алу жиілігінің жоғарылау себептері және осы көрсеткіштерді төмендету мүмкіндігі қарастырылған. Баланы жарып алу кезінде анестезия әдістері, фармацевтикалық периоперативті қолдау сәттері, операциядан кейінгі кезендегі асқынулар туралы сипаттамалар берілген. Басқа аралас патологиялық жағдайларда сәтті абдоминалды босанудың мысалдары келтірілген.

Кілт сөздер: баланы кесар отасымен алу, тыртық қабілеті, анестезия, аралас патология.

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Современный взгляд на проблему кесарева сечения (обзор)

Проблема кесарева сечения имеет медицинские и экономические аспекты, актуальна и широко обсуждается в литературе. В современном мире кесарево сечение по частоте выполнения превосходит все остальные полостные операции. В обзоре рассмотрены причины роста частоты применения кесарева сечения и возможности снижения этих показателей. Описаны методы анестезии при проведении операции кесарева сечения, моменты фармацевтического периоперационного сопровождения, вопросы осложнений в послеоперационном периоде. Приведены примеры успешного абдоминального родоразрешения при сочетанной другой патологии.

Ключевые слова: кесарево сечение, состоятельность рубца, анестезия, сочетанная патология.

The problem of cesarean section, which has medical and economic aspects, is relevant and widely discussed in the literature [1–7]. In the modern world, cesarean section in frequency of execution exceeds all other abdominal operations and is the most common delivery operation [8]. According to the literature, its frequency ranges from 9 to 52%. In the Russian Federation, the frequency of caesarean section in 2007 was 19.3%, according to the V.I. Kulakova Scientific Center for Obstetrics, Gynecology and Perinatology. of the Russian Medical Technologies – 52% [9; 10]. The absolute number of births in the city of Yakutsk over 20 years (1995–2015) increased from 11.6 to 31.7% of the total number of births in the Republic of Sakha (Yakutia) [11]. The frequency of this operation in Kazakhstan in 2007 was 26% of the total number of births [12]. The frequency of cesarean section over 10 years (2006–2016) increased almost 3 times, reaching 16.6% in Europe and 22.3% in the USA [13]. According to the United States, a 1% increase in caesarean section leads to an increase in the cost of obstetric care by $ 63 million per year, with complications this figure increases by a factor of 2–3. A history of abdominal delivery of women with a cesarean section requires an additional cost of up to $ 0.5 billion per year [14].

The reasons for the increase in cesarean section are: relative safety of the operation; reduced risk to the fetus; lack of injury to the muscles of the pelvic floor; correspondence of the method of delivery to the patient's desire; convenience for the obstetrician regarding the duration of delivery; low incidence of intracranial hemorrhage in newborns (with planned cesarean section – 1: 1760 births, with emergency – 1: 907, with spontaneous births – 1: 1900) [15]. In addition, the introduction of new criteria for live births [11], the expansion of indications for surgery on the part of the fetus (distress of the fetus) and mother (chorionamnionitis) [16] is important. It was also suggested that it is easier for a young specialist to have a cesarean section than to master the complex technique of spontaneous delivery. Commercialization of labor is important, because the cost of the operation is an order of magnitude higher than spontaneous labor [17].

Women who have given birth in an abdominal way are candidates for repeated cesarean sections in the future, but they can also give birth naturally under certain conditions. The advantages of vaginal delivery are obvious: maternal morbidity is lower, with fewer postpartum complications and a shorter hospital stay, the cost of childbirth is lower, it is easier to carry out

natural feeding, women return to full life faster, however, in 30% of cases, a caesarean section is an indication for repeated operative delivery [14, 18]. In addition to material costs, repeated cesarean section increases the risk of developing intra- and postoperative complications, maternal morbidity and mortality significantly exceeds that after spontaneous labor and the first cesarean section [19], therefore, over the past 10-15 years, the question of the optimal the frequency of abdominal delivery and real ways to reduce the frequency of cesarean section [17].

Different points of view are expressed. According to some authors, in the near future it is impossible to expect a significant decrease in the frequency of cesarean section. The optimal caesarean section frequency for each obstetric institution should be determined annually by comparing it with perinatal outcomes for full-term babies (perinatal mortality, neonatal morbidity) [20]. Other authors, on the contrary, believe that there is a reserve for reducing the rate of operative labor-strengthening work with women of reproductive age who have 1 scar on the uterus [11]. A conservative delivery of women with a history of cesarean section is one of the real ways to reduce the frequency of abdominal delivery. In highly skilled obstetric hospitals, modern delivery technologies should be the main alternative to excessive enthusiasm for abdominal delivery [14]. Ways to reduce the frequency of cesarean section are: optimization of medical indications for surgery using modern technologies; wider involvement of consultants and other specialists in the discussion of the issue of cesarean section [15]. In 1990, when the caesarean section rate reached 27–30%, the US Department of Health decided to reduce the number of surgical deliveries nationwide to 15% by 2010. In 2005, in the United States, when the number of spontaneous births after cesarean section was reduced to 20%, a state program was adopted that should lead to an increase in the frequency of spontaneous births after cesarean section (at least 50%) as an indicator of the social significance and qualifications of doctors [17].

It has been proven that from 30 to 80% of women who have had a cesarean section can give birth through natural routes with a favorable outcome for both the mother and the fetus [21]. In general, vaginal delivery after cesarean section is considered safe, and in women the incidence is less than in those who underwent planned repeated cesarean section. A model has been created to predict the success of vaginal delivery after cesarean section, which takes into account the estimated fetal mass <3775 g, maternal body mass index <25, previous cesarean section as planned or due to fetal distress and the interval between births <2290 days [8].

However, many women who have had a cesarean section want to give birth again in an abdominal way. Among the indications for repeated cesarean section, there is a refusal of the woman herself, who underwent caesarean section, from the following, repeated birth through the natural birth canal. Women have a fear of natural childbirth, due to fear of pain, injury to the child during childbirth [22].

The main reason for refusing to attempt vaginal delivery of women with a scar on the uterus is the fear of complications, especially uterine rupture. The probability of uterine rupture during childbirth (with a scar on the uterus) is about 0.5%, provided that the birth was not artificially initiated. According to some authors, artificial excitation is the main risk factor for uterine rupture, the risk of rupture increases by 15.6 times after delivery by prostaglandins and 4.9 times without the use of the latter [23]. Other authors believe that the risk of developing uterine rupture is not related to the tactics of vaginal delivery of women with a history of cesarean section and the use of prostaglandins to prepare the cervix. Vaginal delivery in these women is quite justified and relatively safe for the mother, provided that pregnant women are carefully selected and the qualifications of the obstetric institution are appropriate [14].

Rupture of the uterus after cesarean section can occur before birth. Several clinical cases of uterine rupture along the scar after cesarean section during the next pregnancy are described. Complications in all patients occurred in the second trimester of pregnancy. Surgical reconstruction of scars and prolongation of pregnancy were performed. All cases ended with the birth of living children by cesarean section and uterine preservation [24].

The possibility of childbirth through the natural birth canal with a scar on the uterus is determined by the viability of the scar on the uterus, however, there are still no clear criteria for assessing the state of the postoperative scar on the uterus. Such an assessment is usually based on the analysis of data obtained in the study of history, objective research and ultrasound. Clinical and anamnestic data take into account the time elapsed after the first operation, indications and technique of the first operation, the presence of postoperative complications, curettage of the uterine cavity and abortion, especially in the first year after surgery [21, 25–27]. The advent of instruments equipped with a vaginal probe opens up new diagnostic possibilities in determining the condition of the uterine scar. A sufficiently high reliability of the ultrasound data allows us to regard it as an informative method for assessing the state of the uterine scar after cesarean section. Of particular note is the value of the vaginal ultrasound scan of the scar, which allows us to recommend this technique for a comprehensive examination of pregnant women with a scar on the uterus. Echographic identification of 4 types of scar condition allows optimizing delivery tactics in this contingent of pregnant women [12].

On the basis of a pathomorphological study of myometrial pieces obtained intraoperatively from the lower uterine segment when the scar was excised in women with a uterine scar during repeated cesarean section, it was established that connective tissue elements prevailed in the histological specimen subgroup of pregnant women with an inconsistent scar. Lean smooth muscle cells were disordered, between them a large amount of coarse-fibrous connective tissue was determined. In the subgroup with a strong scar, the picture of complete muscularization of the scar was noted, unchanged muscle fibers were determined, smooth muscle cells were arranged in an orderly manner, forming regular bundles. Assessment of the condition of the uterine scar after cesarean section in pregnant women (36–38 weeks) showed that in women with a failed scar a significant increase in the level of active oxygen forms in the blood plasma is observed. In addition, there is a direct correlation between the level of reactive oxygen species and the degree of scar failure [21].

It was established that in the long term after cesarean section and the absence of complications in the postoperative period in the myometrium rumen there are no signs of inflammation and disturbances of micro lymphohemocirculation, therefore, with a whole fetal bladder and adequate contractile activity of the uterus, spontaneous delivery is permissible [28]. In addition to medical indications and recommendations, in the choice of a repeated cesarean section or natural birth, the desire of the woman herself and her psychological attitude play a role. A survey of women who underwent both natural childbirth and cesarean section showed that they would choose childbirth through the natural birth canal as a method of delivery in subsequent births [22].

In order to study the effectiveness of the prevention of delivery by cesarean section in 2015–2016. In women's clinics, medical organizations in Kazan, an organizational experiment was carried out on the developed measures, which made it possible to obtain a tangible preventive effect in reducing the frequency of this operation and to increase the effectiveness of the work of an obstetrician-gynecologist. Thus, elimination of 49.6% of negative medical and social risk factors among pregnant women allowed, compared with the control group, to reduce the rate of delivery of operations by cesarean section by 56.8% [29].

Methods of anesthesia during cesarean section are general anesthesia and neuroaxial anesthesia. Neuroaxial anesthesia is currently the method of choice for cesarean section surgery (up to 90%). Indications for general anesthesia for cesarean section are determined only if there are contraindications for neuroaxial methods of analgesia (spinal, epidural and combined spinal-epidural anesthesia [30–32].

The use of spinal anesthesia in practice has shown that, with all its advantages, there is a low efficiency of postoperative analgesia, which was achieved using parenteral administration of narcotic and non-narcotic analgesics. All patients noted a sharp contrast in health – absolute comfort during the operation and significant pain on the 1st day of the postoperative period. In this

regard, the technique of combined spinal-epidural anesthesia was introduced into practice. At the same time, puncture and catheterization of the epidural space was performed at the L1-L2 level, after an aspiration test and a negative test dose, the catheter was fixed; then a lumbar puncture was performed at the L4-L5 level with intrathecal administration of a local anesthetic with or without adjuvants. Effective anesthesia occurred after 4-7 minutes, the duration of anesthesia was determined by the pharmacodynamics of the local anesthetic and adjuvants. Actually, the cesarean section operation with this technique was ensured by the effects of spinal anesthesia, and the presence of a permanent catheter in the epidural space made it possible to prolong anesthesia in case of an increase in the duration or expansion of the volume of surgical intervention. Immediately after the operation, morphine (5–7 mg) was introduced through the catheter into the epidural space, which ensured reliable analgesia in the postoperative period lasting from 18 to 24 hours. All patients noted good health and the complete absence of pain, which contributed to earlier activation after surgery, reducing the time spent in the intensive care unit. Consequently, combined spinal-epidural anesthesia can be considered the method of choice, which allows combining the advantages of spinal anesthesia and long-term epidural analgesia while at the same time leveling their shortcomings [32].

The addition of regional anesthesia to multimodal analgesia for cesarean section can improve the quality of postoperative analgesia. It was found that the use of Transversalis Fascia Plane Block with bilateral ultrasound control leads to effective analgesia and a decrease in the need for analgesia in the first 24 hours in patients undergoing cesarean section [33].

In order to increase analgesia in the intra- and postoperative period during cesarean section, the effect of subhypnotic doses of ketamine in combination with transverse blockade of the abdominal muscles was studied. In the first group, epidural lidocaine 200 mg and ropivacaine 100 mg were used. In the second group, lidocaine 200 mg and morphine 4 mg. In the third group, lidocaine 400 mg and fentanyl 0.1 mg with the use of ketamine 0.5 mg / kg / h. In the postoperative period, everyone underwent transverse blockade of the abdominal muscles. The use of subhypnotic doses of ketamine allows one to achieve better pain relief with much better tolerance and a significantly lower frequency of side effects [34]. When analyzing the effects of epidural anesthesia, it was found that the main indications for operative delivery were preeclampsia, not amenable to drug correction, amniotic fluid embolism, premature detachment of normally located placenta, uterine scar after previous cesarean section. It was found that this method provides significantly earlier motor activity in the postoperative period, early attachment to the chest, better hemogram indicators, accompanied by less perioperative blood loss, and newborns have significantly better vital indicators [35]. However, prolonged epidural analgesia, along with positive properties, has several disadvantages: it suppresses reflexes of the muscles of the pelvic floor, and is often accompanied by hemodynamic instability. Local anesthetics used for prolonged epidural anesthesia are not deprived of a depressing effect on the fetus. This is especially true for labor anesthesia in women with a high degree of risk (preeclampsia of various severity, diseases of the cardiovascular system, chronic nonspecific lung diseases), as well as in situations where prolonged analgesia is necessary in labor [31].

Despite the advantages of regional anesthesia, in some cases (emergency surgery, contraindications for regional anesthesia), general anesthesia is the method of choice. When choosing a method of general anesthesia, an anesthesiologist-resuscitator inevitably encounters problems associated with both physiological changes during pregnancy (tube intubation, vomiting, aspiration and regurgitation), and the effect of anesthetics on the fetus. The latter, when using the technique of total intravenous anesthesia with artificial ventilation of the lungs, forces the use of so-called «surface» anesthesia before the fetus is removed, which undoubtedly reduces the quality of anesthesia and increases the risk of complications, including the patient's undiagnosed intraoperative awakening. Therefore, obstetric anesthesiology constantly searches for the safest and most optimal anesthetic for both the pregnant and the fetus. Currently, the drug closest to the ideal

anesthetic is sevoflurane. Properties of sevoflurane: lack of pungent odor, rapid induction of anesthesia, mild dose-dependent depression of the myocardium, lack of sensitization to the arrhythmogenic effect of catecholamines, a slight increase in cerebral blood flow, minimal effect on the tone of the uterine muscles.

In order to assess the quality of anesthetic support for abdominal delivery using the low-flow anesthesia method based on sevoflurane, a prospective randomized examination of 95 patients without extragenital pathology was performed, who underwent abdominal delivery in a planned and emergency manner. Depending on the method of anesthesia, the patients were divided into two groups. The first group consisted of pregnant women who used low-flow anesthesia based on sevoflurane. The second group included pregnant women who underwent total intravenous anesthesia with mechanical ventilation. It was found that the duration of induction into anesthesia with the use of sevoflurane is on average 34.8% longer than with sodium thiopental. Compared to total intravenous anesthesia with mechanical ventilation during abdominal delivery, low-flow inhaled anesthesia based on sevoflurane provides reliably more stable hemodynamic parameters while maintaining oxygenation at a sufficient level. In patients who underwent surgical delivery on the background of low-flow inhalation anesthesia based on sevoflurane, in the postoperative period there was a significantly faster waking up and the ability to execute commands, which makes it possible to assess the exit from anesthesia as more favorable. Therefore, anesthesia based on sevoflurane can improve the quality of anesthesiology benefits for abdominal delivery [36].

Optimization of anesthesiology benefits is an important and serious problem of modern obstetric anesthesiology, since the anesthetic drugs used during surgical delivery have a depressing effect on the activity of the central nervous system, which in turn leads to an increase in the severity and duration of cognitive impairment. It was found that cognitive functions reliably depend on the method of anesthesia performed: when using spinal anesthesia by the 7th day of the postoperative period, cognitive status is fully restored, and when cesarean section is performed under general anesthesia, cognitive functions remain reduced. Hand-eye coordination does not depend on the method of anesthesia and improves as the duration of the postoperative period increases [37–39].

In women who undergo a caesarean section, another pathology is often observed, which necessitates an expanded examination, preparation for surgery or additional surgical intervention [40–43]. For example, uterine fibroids is the most common neoplasm of the female reproductive system. The frequency of combination of uterine fibroids and pregnancy varies from 1.6 to 10.7%, and more often fibroids occur in pregnant women of late reproductive age. Traditionally, myomectomy during cesarean section was not recommended due to the risk of bleeding and postoperative complications. However, there is evidence of successful cesarean section with simultaneous myomectomy in 260 pregnant women with uterine myoma [44].

Own data on the features of the course, complications and pregnancy outcomes in 7 women with bladder exstrophy are presented. With preserved renal function, the absence of renal failure, the birth of a viable fetus is possible. The delivery method is corporal caesarean section. Bladder exstrophy is a severe congenital malformation of the genitourinary system in which the anterior wall of the bladder and the lower middle part of the anterior abdominal wall are absent. Thus, in women with bladder exstrophy, pregnancy is possible. Due to cicatricial changes in tissues in the lower parts of the anterior abdominal wall, gross malformations of the genitourinary system, deformation of the pelvic bones, and a high risk of uterine prolapse during spontaneous delivery, median laparotomy, corporal caesarean section with sterilization are shown [45].

Brain tumor of pregnant woman is a relatively rare disease. A clinical observation is given when, due to the progression of neurological symptoms, a young woman with a brain tumor with a gestational age of 36–37 weeks underwent simultaneous operation of ventriculo-peritoneal bypass surgery and cesarean section. The patient was discharged on the 7th day after the operation with the recommendation of an additional examination by a neurosurgeon and the question of surgical treatment of a brain tumor [46].

Successfully simultaneously delivered and carried out radical surgical treatment for neoplasm of the mediastinum. It is believed that the question of the possibility of prolonging pregnancy, the features of its management, methods and timing of delivery should be discussed in consultation, with the participation of surgeons. Moreover, early diagnosis of thoracic pathology is important. Modern methods for its identification allow you to examine pregnant women, avoiding ionizing radiation. The method of choice can be considered an MRI of the chest and ultrasound diagnostics. The operation should be performed by two teams: thoracic surgeons and obstetricians-gynecologists. Particular attention should be paid to organizational issues of providing qualified anesthetic, surgical and pediatric care to such patients at all stages of the examination and perioperative period [47].

In addition to the appearance of a scar on the uterus, cesarean section has other negative factors: the presence of a certain degree of risk (risk of anesthesia, blood loss, the possibility of injury to adjacent organs, etc.); complications after surgery (bleeding, infection, thromboembolism, etc.) [15; 24; 48]. In the long term, the transferred cesarean section is a risk factor for the subsequent occurrence of abnormally attached placenta [49].

A common complication after surgery is bleeding. According to the authors, for the prevention of postpartum hemorrhage after cesarean section in case of twin pregnancy, carbetocin is a more effective drug than oxytocin [50].

Caesarean section is accompanied by a significantly larger number of infectious and inflammatory complications than spontaneous delivery, while generalization of the infection and the likelihood of sepsis after cesarean section are 3.2 – 10 times higher than during delivery through the natural birth canal [51]. The ideal antiseptic for preparing the skin before elective caesarean section (CS) has not yet been determined. Chlorhexidine alcohol or povidone iodine are equivalent antiseptics for these purposes [52].

By prophylactic administration of antimicrobial agents to the mother, it is possible to significantly reduce the risk of developing infectious and inflammatory complications after cesarean section, however, a retrospective study conducted in one of the maternity hospitals in Bishkek showed that in the vast majority of cases (81%) perioperative antibiotic prophylaxis did not comply with modern principles as at the choice of the drug, and at the time of its administration. The use of adequate perioperative antibiotic prophylaxis was noted only in 0.4% of cases.

The most common stereotypes of irrational use of antimicrobial agents for caesarean section are: the appointment instead of perioperative antibiotic prophylaxis of preventive antibiotic therapy in the postoperative period for a long time (86%); unreasonable administration of 3, 4, and 5 antimicrobials at the same time in puerperas without signs of IOS (92%, 86% and 66%) the simultaneous administration of several antimicrobials from the same pharmacological group or with a similar mechanism of antimicrobial action [53].

Despite the high anti-infective effectiveness of antibiotic prophylaxis, consensus on which antibiotic, in what dose, how and when to administer to a woman has not yet been reached. In obstetric institutions of Russia, a 5-day postoperative course of antibiotics is still practiced.

277 patients with a risk of developing infectious complications after cesarean section were examined to assess the preventive and economic effects of three modes of prevention: intravenously 3 g of cefazolin (group 1), a 5-day course of benzylpenicillin after surgery (group 2), and uterine irrigation with chlorhexidine (3rd group). In groups 1 and 3, the infection did not develop, while in group 2, endometritis and wound infection occurred in 8.7% of patients. The cost of prophylaxis with cefazolin and chlorhexidine, respectively, is 3 and 11 times less than the cost of a 5-day course of benzylpenicillin. Thus, the introduction of 3 g of cefazolin on the day of cesarean section to the mother, as well as the irrigation of the uterine cavity before stitching her incision with chlorhexidine solution compared to the 5-day course of benzylpenicillin, allowed to reduce the incidence of infectious and inflammatory complications of planned cesarean section from 8.7% to zero, the latter indicates a high preventive effect of these methods for the prevention of postoperative sepsis, they

can be recommended for widespread implementation in practice as the most effective and relatively cheap high. The cost of preventing infectious and inflammatory complications with cefazolin and chlorhexidine was 3 and 11 times lower than the cost of preventing benzylpenicillin [54].

In order to avoid mistakes in the diagnosis and treatment of peritonitis after cesarean section, they suggest using modern objective methods for assessing the severity of intoxication syndrome APACNE-II, SAPS for monitoring patients in the postoperative period. To assess the course of the infectious process and predict possible progression, it is necessary to determine the criteria for SIRS, the dynamics of procalcitonin in the blood serum. Syndrome of a systemic inflammatory response (SIRS) includes the following indicators: body temperature more than 38 or less than 36 degrees Celsius, pulse more than 90 beats per 1 minute, respiratory rate more than 20 per minute; leukocytosis, immature forms of neutrophils more than 10%; P CO2 – less than 32 mm Hg The presence of 3 or more signs indicates the development of sepsis (SIRS-3, SIRS-4), this is regarded as the initial stage of sepsis. In the absence of urgent therapeutic measures, including the rehabilitation of foci of infection, the process quickly becomes more severe. Joining these signs of organ and system failure is defined as severe sepsis. The occurrence of arterial hypotension (blood pressure below 90 mm Hg), despite adequate replenishment of the volume of circulating blood, which requires the use of vasopressors for its correction, is defined by the new classification as septic shock. Thus, both clinical and laboratory indicators of the criteria for assessing SIRS, available in any medical institution, allow the doctor to objectively assess the severity of the process and the results of the therapy. Persistent preservation of SIRS, despite ongoing intensive care or the addition of functional dysfunction of certain organs and systems (liver, kidneys, etc.) to it, indicates the progression of the process and the development of sepsis.

It is believed that this mobilizes the doctor, dictates the need for treatment of patients in critical condition mode. One of the main advantages of the new classification of sepsis over existing ones is in this preventive recognition and the advancing principle of treatment. Also, the undoubted advantage of using the new classification over the general definitions of «sepsis», «septic state» is the possibility of a differentiated assessment of the stage and severity of the process (SIRS-3, SIRS-4, severe sepsis, septic shock), which allows you to choose the appropriate tactics and scope of treatment. The author believes that compliance with the uniform principles of diagnosis and surgical treatment allows timely diagnosis of complications and significantly improves the results of treatment of women with peritonitis after cesarean section [55]. One of the things that motivate women to make a decision on cesarean section is the belief that the risk of fetal damage is significantly reduced. However, a cesarean section does not exclude the possibility of various fetal injuries. Before cesarean section, all risk factors for possible trauma to the fetus must be considered. In case of difficult fetal extraction, all known benefits should be applied in a timely manner, contributing to its careful extraction. In the presence of any fetal injury during surgery, this fact should be recorded in the history of childbirth and the history of the development of the newborn and inform the puerpera about this. Newborns after difficult extraction at cesarean section need in-depth research [10].

The psychological aspects of caesarean section are important. Among the mental disorders associated with childbirth and the postpartum period, the most common are postpartum depression and post-traumatic stress disorder. In order to study the psychological aspects of abdominal delivery, 500 women were examined. Among the mental disorders associated with childbirth and the postpartum period, the most common are postpartum depression and post-traumatic stress disorder. The results were read using tablet keys for each questionnaire. According to a survey conducted among women undergoing a cesarean section, the psychological significance of the quality of obstetric care provided was revealed. The first factor women indicated was support from medical personnel before, during, and after delivery. Women were very appreciated when there were medical workers nearby, from whom they felt care and support, when doctors and nurses spent time with the woman, listened to her, talked, explained what was happening, supported her

emotionally. Women who believed that the medical staff supported them during childbirth had a more positive attitude to Caesarean section. The second factor, which plays a large positive role in shaping a woman's attitude to cesarean section, was the degree of her participation in deciding on the need for surgery. For women who participated in deciding on the need for surgery and received complete information from doctors, the psychological outcome of Caesarean section was more favorable. The third factor influencing the psychological outcome of a caesarean section was the woman's feeling of the need for the operation. Women sometimes believed that a cesarean section could be avoided, that it was done in vain (if the main indication for the operation was relative, that is, the obstetricians had different points of view). For example, such relative indications include breech birth, prolonged labor, a history of cesarean section. Sometimes women considered their cesarean section unreasonable due to poor contact with an obstetrician. If a woman believed that a cesarean section was performed without evidence, the psychological outcome, as a rule, was less favorable [15].

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