

A Modern Look At the Problem of Caesarean Section (Review)

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Abstract. Caesarean section (CA) (caesarean section) is a surgical operation in which the pregnant uterus is cut, the fetus and afterbirth are removed, the integrity of the uterine wall is restored. KS is one of the most common operations in obstetric practice, related to emergency aids, which should be able to be performed not only by every obstetrician-gynecologist, but also by a doctor of any specialty who owns surgical techniques. In modern obstetrics, KS is of great importance, since with a complicated course of pregnancy and childbirth, it allows you to preserve the health and life of the mother and child. CS as any surgical intervention can have adverse consequences both in the immediate postoperative period (bleeding, infection, pulmonary embolism (PE), OS embolism, peritonitis), and in the remote periods of a woman's life

Cesarean section (CS) is a surgical operation in which the pregnant uterus is cut, the fetus and placenta are delivered, and the integrity of the uterine walls is restored. Caesarean section is the most common surgical method in obstetrics practice, and not only obstetrician-gynecologists, but any specialist doctor should be able to perform the operation technique. In modern obstetrics, cesarean section is of great importance, because it allows pregnancy and childbirth to pass without complications, and the life of the mother and the child can be saved. Cesarean section, like any surgical intervention, can cause negative consequences before and after the operation (bleeding, infection, thromboembolism, peritonitis) [21,23].

Protection and strengthening of public health is an important strategic direction of the state social policy. The main trends in society – low birth rate, families with few children, environmental problems, predetermine the characteristics of modern obstetrics. The second includes a significant increase in the frequency of abdominal births, and the expansion of indications for this operation is explained by the fact that the interests of the fetus prevail [3,7].

At the end of the 20th century and the beginning of the 21st century, two trends appeared in medicine and health care that influenced and affected the evolution of humanity, especially its reproduction, and these are assisted reproductive technologies and caesarean section surgery. For

some reason, these two trends are related to each other, the majority of women who conceive through Assisted reproductive technologies end up having a cesarean delivery. Statistical studies have shown that in the second decade of the 21st century, cesarean section surgery was among the most frequently performed operations in abdominal surgery, and surgical delivery increased, and practitioners did not use vacuum extraction and obstetric clamps at all [5,9,11].

In Russia, the frequency of caesarean section is 15-16% on average, it reaches 30-40% in perinatal centers, and there is no downward trend. According to a number of researchers, a 16% increase in the frequency of this operation did not significantly affect perinatal outcomes, but at the same time increased maternal morbidity and mortality[1,14].

Analysis of the structure of indications for delivery by caesarean section is mainly based on extragenital pathologies (endocrine diseases, diseases of the gastrointestinal tract, kidney pathology, organs of vision, etc.), infertility, menstrual dysfunction, prevalence of patients with uterine fibroids, as well as extracorporeal insemination at an older age. It was determined that first-time mothers and pregnant women underwent reconstructive plastic surgery on pelvic organs[16,18,20].

However, the increase in the frequency of abdominal delivery, as well as intrauterine organ-sparing operations, is problematic, for example, pregnancy and delivery in women with uterine scars[10,12].

During the last decade, there has been an increase in the frequency of caesarean section in all countries of the world: from 5% in 1970 to 15-50% in 2017. At the same time, the frequency of abdominal delivery varies greatly in different countries of the world[2,4].

Indications for targeted expansion of caesarean section surgery are used for three purposes: perinatal mortality, pediatric and obstetric trauma. The evidence presented is not reliable enough, although the caesarean section is the optimal method of delivery for the child, it can be somewhat psychologically offensive for the mother. Therefore, it would be a big mistake to believe that we will improve women's health, including reproductive health, by expanding caesarean section rates in the face of continuing decline in population health [8,13].

According to foreign researchers, in many cities of North America and Western Europe, almost every fourth child is born by caesarean section. The highest number of cesarean sections are performed in Brazil, Chile, Mexico, China, Australia and Germany. Perhaps, in these countries, the surgical method of cesarean section is performed not only for medical reasons, but also according to the wishes of the woman ("elective cesarean")[22,24].

In almost half of the total number of births, there are countries where caesarean section is performed, for example, in Sri Lanka, in Latin America abdominal birth is 24-46%. At the same time, caesarean section is performed the least in Japan (15%). At the same time, in the developing countries of Central Africa and Asia, caesarean section is not performed, even if the pregnant woman has urgent instructions, because most of the pregnant women are from low-income strata of the population[6,15].

In our country, according to different authors, the frequency of cesarean section operation ranges from 9% to 33.6% and depends on the level and profile of obstetric care[19].

One of the most serious complications in the work of an obstetrician-gynecologist is massive bleeding from the uterus, which remains one of the main causes of maternal death, despite the emergence and introduction of new methods of surgical and pharmacological hemostasis.

A number of authors state that half of all obstetric hemorrhages occur due to hypotension or uterine atony. At the same time, it was found that there are some factors that predispose to

bleeding, namely, a change in the ratio of the components of the blood clotting system when the placenta ceases to function during separation [17].

In postpartum women, the level of PAI-2, an inhibitor of plasminogen activator synthesized in the placenta during separation of the placenta, decreases for a short time, which leads to an increase in the activity of the plasmin component of the hemostatic system in the postpartum period, which leads to an increase in blood loss. This factor can increase the amount of blood loss due to other background diseases. In addition, the risk of blood loss and massive uterine bleeding with caesarean section is higher compared to vaginal delivery [19,21].

Currently, in practical obstetrics, various methods are used to treat already existing uterine bleeding, taking into account the reasons that caused it [3,6].

In recent years, there has been an increasing trend in the number of patients who experience anxiety and depression during pregnancy and take sedative drugs in this regard. Elevated anxiety and depressive states are very common, but due to insufficient attention, they often have a negative impact on pregnancy processes and pregnancy outcomes [5,10].

In addition, in recent years, the issue of the influence of the autonomic nervous system on the development of pregnancy and obstetric complications has become relevant. According to some authors, due to the balanced functioning of the sympathetic and parasympathetic nervous systems, the physiological and biochemical indicators of the woman's body, the rhythm of the cardiovascular, respiratory and other systems are maintained at an optimal level during pregnancy and childbirth. At the same time, according to other scientists, in recent years, the frequency of diseases of the autonomic nervous system in pregnant women is 3 times higher and made up 19.8% of all somatic diseases [1,11,22].

This increases a certain interest in studying the characteristics of pregnancy and childbirth against the background of symptomatic dysfunction in order to develop measures to prevent the development of disorders and complications. At the same time, in the available literature, we did not find information on the relationship between the types of the autonomic nervous system and blood loss during cesarean section [24]. Most of the time, pregnancy and childbirth with an emerging or progressive obstetric pathology end with an abdominal delivery.

According to various sources, the frequency of caesarean section in severe preeclampsia and eclampsia is 79%, in premature labor – 32%, in the case of labor dyscoordination – 13%, premature separation of the placenta – 92%. Cesarean section is performed in 83% of pregnant women with this pregnancy complication to reduce perinatal losses due to placental insufficiency and fetal deterioration [3,4].

According to the researchers, unsatisfactory labor or lack of labor is not always an indication for cesarean surgery (such a high percentage may be due to their inability or unwillingness to treat). In general, caesarean section is used in one in five births when unsatisfactory labor or labor is complicated by anomalies.

According to Y. Zipori et al. (2019), the outcome for the mother and the child may be good for the mother and the child during natural childbirth, but if the woman is delivered without a cesarean section during the second stage of labor, it may lead to an increase in complications for the mother (injury of the umbilical cord, postpartum (increasing bleedings), and for the child (causes pH < 0.7 in the blood in the umbilical system to decrease and to be taken to the intensive care unit) [11,23].

A number of researchers explain the development of any complications during pregnancy and childbirth by the violation of compensatory-adaptive mechanisms in the mother-placenta-

fetus system, adaptation of the woman and the fetus to the stress of childbirth.

In general, abdominal birth leads to a decrease in the number of fetal complications: 3 times in breech delivery, 3 times in premature birth, 5 times in fetal aspiration syndrome, as well as 3 and 4 times in obstetric and extragenital pathologies. Timely abdominal delivery prevents 53% of congenital injuries in pelvic floor muscles, 75% of women with severe disabilities, and 80% of maternal deaths in emergencies[19,22].

According to most local obstetrician-gynecologists, cesarean section should be performed if there are strict medical instructions, not according to the woman's will, as in some foreign countries. In any type of surgical intervention, various complications can occur during and after the operation. According to various authors, the prevalence of complications during cesarean section is 7-19.5 percent and may be related to both obstetric and extragenital pathology, i.e. contraction activity of the myometrium, abnormalities in the development of the uterus and the location of the placenta, fetal death, as well as somatic diseases associated with severe decompensated course[5,11,13].

In addition, the number of complications increases due to the long duration of the operation, technical intraoperative difficulties, insufficient qualification of doctors, partial equipment of the medical institution and other factors.

One of the most uncomfortable and relatively frequent (12.4%) complications of abdominal childbirth is massive uterine bleeding, one of the main causes of maternal death in the world. In Russia, over the last ten years, maternal mortality related to pregnancy bleeding was 16.2% on average[2,6].

At the same time, bleeding as a cause of maternal death appears as the main condition – in 20% of cases, as a competing and initial condition – in 42% and 78% of cases, respectively. This is less than developing countries (25%), but much higher than, for example, Scandinavian countries (1.7%). Compared to the total number of births, according to various sources, the rate of obstetric hemorrhage in Russia averages 9-17%, 50% of this pathology is associated with uterine hypotension, 18% with severe preeclampsia and eclampsia, and 15% with premature migration of a normally located placenta. , in 8% of cases, clinical bleeding occurs with hereditary or acquired defects of the hemostasis system, in 6% - after septic shock, in 3% - after amniotic embolism[5,19,21].

As with any surgical procedure, cesarean section surgery is associated with the risk of bleeding during the operation. It should be noted that another reason for increased blood loss during cesarean section is hypertrophy of uterine tissue associated with intensive blood supply and pregnancy.

Currently, according to the WHO, up to 500 ml of blood can be lost during a natural birth and up to 1000 ml during an abdominal delivery. According to leading obstetrician-gynecologists, blood loss of more than 1000 ml (1.1%-1.5% of body weight) is pathological, and blood loss of 1500 ml (more than 1.5% of body weight) is massive[9,21].

Blood loss can increase significantly (2-4 times) during an emergency caesarean section. Hypotonic bleeding with impaired uterine contractility is observed both in operative delivery and in vaginal delivery. The development of a large amount of blood loss and life-threatening bleeding is accompanied by abnormalities in the location and attachment of the placenta (8%), which often requires the involvement of a wider range of specialists and expensive equipment.

The development of massive bleeding is associated with a lack of clotting factors, as well as simultaneous blood loss (more than 1500 ml)[8,12].

It is known that massive uterine bleeding leads to the development of severe hemorrhagic anemia, which leads to the suppression of the body's defense mechanisms with changes in many immunological parameters, and is a favorable ground for the development of infectious and inflammatory processes. However, it should be noted that despite the risk of intraoperative and postoperative complications, abdominal delivery is a necessary type of surgery in a number of clinical situations to reduce obstetric and perinatal adverse outcomes.

In conclusion, if we talk about this surgical method for the next 5 years, we should definitely not expect a significant decrease in cesarean deliveries, and in large obstetric hospitals, its rate is around 20-25 percent, and it is undoubtedly maintained until now.

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