



SOCIAL PROBLEM AND MEDICAL SOLUTION TO UTERINE RUPTURE

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Abstract:

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This article discusses the results of studies of women with uterine ruptures, main causes (scar, drug use, trauma, etc.), pathogenesis. Legal basis for the use of prostaglandins, the "fundal pressure" method. Management algorithm for suspected uterine rupture.

Keywords: *uterine scar, uterine rupture, myometrial pathology, iatrogeny.*

Uterine rupture, or violation of the integrity of its walls, is the most severe manifestation of obstetric trauma. Despite the long-standing history of this problem, it cannot be considered solved. Over time, although the incidence of uterine rupture has decreased, this obstetric pathology continues to be a serious problem [1-5, 7]. The reduction in the frequency of uterine ruptures due to mechanical reasons (improper position of the fetus, clinically narrow pelvis, etc.), as well as violent ruptures due to rough and careless obstetric interventions, has given priority to histopathic ruptures, in which etiological causes have only been increasing in recent years. Among the etiological reasons, instead of an obstetric history burdened by operations on the uterus, uterine perforations and cervical ruptures in previous births, endoscopic myomectomies, especially with coagulation hemostasis, have recently come to the fore. Previously non-existent types of histopathies appear, associated with the advent of assisted reproductive technologies, in which there is also a higher, in comparison with the general population, frequency of uterine ruptures caused by abnormal trophoblast invasion (both superficial and deep). So far isolated descriptions of cases of rupture of an intact uterus after IVF have begun to appear, such as, for example, a case of uterine rupture at 18 weeks, caused by rotation of the placenta and ending in the death of the patient [18]. Recently, cases of rupture of the non-pregnant uterus [14] associated with congenital or acquired myometrial weakness, damage to the collagen matrix (Ehlers-Danlos type IV) [20] or abnormal architecture of the uterine cavity have been described in the literature. Also creating difficulties for the development of a "golden" standard for diagnosis and treatment is the lack of a unified classification and terminology of uterine

ruptures, which leads to the impossibility of comparing foreign and domestic statistical data.

The most manuals adhered to the classification of L.S. Persianinov, developed in the 50-70s of the 20th century, and subsequently it wandered from publication to publication. The only thing new that appeared was the use of new diagnostic methods: ultrasound, CT, etc.

However, the requirement of modern obstetrics is not only the question of the need for diagnostic procedures, but also the assessment of their diagnostic value. Often these assessments help to understand why uterine rupture is not diagnosed in a timely manner. For a practicing physician, etiopathogenetic theories are of auxiliary importance; the main issue remains the timeliness of diagnosis and treatment of uterine rupture.

In foreign literature, as a rule, two definitions are used: gap uterus and divergence of the uterine scar. This division of the two syndromes is justified, since they differ in clinical course and outcome for the woman and the fetus. By definition, the dehiscence of the uterine scar should not extend to the visceral peritoneum and is characterized by minor bleeding from the edges of the wound. In addition, the fetus, placenta and umbilical cord remain within the uterine cavity and are rarely accompanied by fetal suffering.

E.K. Ailamazyan proposed to distinguish only 2 clinical forms of uterine rupture: threatening and accomplished, since at the patient's bedside it is almost impossible to distinguish between the symptoms of threatening and ongoing uterine rupture. Moreover, their tactics are the same. This is absolutely fair, since it facilitates the doctor's clinical practice and does not interfere with emergency decision-making.

It is not always possible to decide unambiguously what is the cause of uterine rupture, since in most cases there is a complex of unfavorable factors, and from the point



of view of expert medicine, we can only talk about the likely role of one or another factor.

The increased use of uterotonic drugs has raised legitimate concerns about the risk of uterine rupture, but evidence on this issue is lacking. Despite the fact that analysis of cases of maternal mortality that occurred due to uterine rupture in our country often notes the use of uterotonics as a cause, to assess the risk of the very fact of using uterotonics and the increased risk of uterine rupture, this fact of difference is of secondary importance. The highest incidence of oxytocin use among cases of uterine rupture is reported in a study by A. Golan et al. (1980) - out of 126,713 births, there were 61 cases of uterine rupture, of which oxytocin was used in 26 cases (43%) [13]. From these data it is clear that the majority of uterine ruptures during childbirth in pregnant women who do not have uterine scars occur without the use of uterotonics, so the risk of using oxytocin in terms of increasing the frequency of uterine ruptures is somewhat exaggerated. The safety of prostaglandins is not so clear. In the USA, they are prohibited for use for induction in pregnant women with uterine scars, but continue to be used in the absence of scarring, and in any variant: topical dinoprostone, topical and oral isoprostol (cytotec).

The pathogenesis of uterine rupture during prolonged labor is associated with increasing ischemia myometrium, the accumulation of under-oxidized metabolic products that damage myometrial cells, contributing to their loosening and loss of elasticity. Outstanding domestic obstetrician N.S. Baksheev, teacher, scientific supervisor prof. V.E. Radzinsky, described this process as "grinding." Prolonged labor is often accompanied by an increasing ascending infection, which further aggravates the patient's condition when the uterus ruptures and increases the risk of maternal mortality. According to T. Elkins et al. (1985), out of 45 cases of uterine rupture, 9 resulted in death, 8 of them with symptoms of sepsis [12].

Surgical aids during childbirth, such as vacuum extraction, obstetric forceps or pressure on the fundus of the uterus, are strongly associated in the obstetric community, and indeed in the general public, with a high incidence of maternal and child complications.

Moreover, a persistent dominant prevails in the public consciousness that these complications are caused by the procedure itself. This opinion is quite difficult to shake, especially since it is supported by statistics - the frequency of maternal, perinatal morbidity and mortality is higher with surgical childbirth. When forming such an opinion, a very important point is missed - surgical aids are resorted to when complications of childbirth occur or severe suffering of

the fetus, and therefore it is difficult to determine with evidence what is primary - perinatal complications associated with the cause that forced the treatment operational assistance, or the provision of assistance itself [21].

The most mysterious and controversial obstetric the benefit, commonly referred to as "Kristeller," is strongly linked to the risk of uterine rupture. The idea of the procedure was to enhance contractions of the uterus during labor by massaging it and repeated short-term pressures in the direction of the longitudinal axis of the birth canal [25], with the development of weakening labor pain during the pushing period, or weakness of the anterior abdominal wall. It must be said that this idea was not new: helping a newborn fetus by pressing the fundus of the uterus with one's hand was described several hundred years before S. Kristeller, for example, Ambroise Pare writes about him. S. Kristeller warned against the use of excessive force and warned about the possibility of premature placental abruption, although he himself did not observe such complications.

The technique is "fundal pressure", i.e. pressure on the fundus of the uterus, and it is somewhat different from that proposed by S. Kristeller. There are some differences between countries regarding recommendations for use or limitation of use of the technique. The clinical guidelines of the French Association of Obstetricians and Gynecologists indicate that from a medical point of view there are no justified indications for the use of this technique. The traumatic experiences of patients and their families, as well as the occurrence of rare but serious complications, are grounds for discontinuation of its use. If it is necessary to quickly complete the second stage of labor, instrumental or operative delivery is recommended depending on the clinical situation. However, if this benefit is provided during childbirth, a mandatory note in the medical history of the responsible person is required, indicating all the details of the procedure [16]. The WHO is less categorical when defining "pressure on the fundus of the uterus"

in category C - "methods that have insufficient evidence to make clear recommendations and should be used with caution until further research brings clarity to controversial issues." It is worth noting that this category also includes: non-pharmacological methods of pain relief, such as herbs, water immersion and transcutaneous electrical neurostimulation; routine early amniotomy; techniques for protecting the perineum; active handling of the fetus at the time of birth; routine use of oxytocin; the use of controlled cord traction or a combination thereof during the third stage of labor; early cord clamping; nipple stimulation to



enhance uterine contractions in the third period. As you can see, many methods from this category are used quite openly in our country with corresponding entries in the history of childbirth, and only "pressure on the fundus of the uterus" is subject to general obstruction.

The scar on the uterus, as a risk factor for its rupture, has emerged in recent decades

to first place. This is caused by the ever-increasing percentage of abdominal births and the growth of laparoscopic interventions on the uterus, especially in nulliparous women, and the abolition of the previously valid postulate - "once a cesarean, always a cesarean." However, not all scars have the same risk of failure.

The corporal scar has a risk of rupture 1: 9, "T" and "J"-shaped 2: 50, Therefore, the American College of Obstetricians and Gynecologists (ACOG) does not recommend vaginal delivery after a classic, "T" or "J" uterine incision.

The scar on the uterus after cesarean section in the lower uterine segment has the lowest risk of rupture, especially when suturing the uterus with a 2-row synthetic suture. Successful vaginal delivery after cesarean section is the key to the lowest risk of uterine rupture along the scar. Best B.M. Mercer et al. (2008) proved that the frequency of uterine rupture along the scar during subsequent successful vaginal births decreases by 2 times (from 0.87% to 0.45%), and the number of successful births after cesarean section no longer matters (with two successful births 0.43%, with three 0.41%) [19].

According to several studies, the risk of uterine rupture after myomecomy performed via laparotomy is 5.3%.

According to most foreign manuals, the most common sign - Uterine rupture is a disturbance in the fetal heart rhythm - early or late decelerations, then persistent bradycardia. Persistent fetal bradycardia, according to E. Bujold et al. (2002), was observed in 87% of cases of uterine rupture and was the first symptom of uterine rupture [10].

These data are confirmed by a study by A.S. Leung et al. (1993), in which disturbance of the fetal heart rhythm in 79% of cases was the first symptom of uterine rupture [17].

If there is a separation of the wall without the rupture exiting into the abdominal cavity, then it is almost impossible to make a diagnosis by manual examination, and the only symptoms will be pain in the area of the rupture, a change in the blood test characteristic of bleeding, the uterus deviates in the direction opposite to the one in which the rupture occurred, and contracts poorly. Bleeding and a picture of shock can also develop delayed, several hours after birth. In rare cases of

uterine rupture, there may be no external bleeding at all, the uterine rupture remains unrecognized, and then the clinical picture of peritonitis begins.

An attempt to use additional research methods that high diagnostic value is attributed to such as CT or MRI, in this situation it always comes down to the main problem: lack of time, since after a short period of time after the rupture, pronounced disturbances in the condition of the mother and fetus begin. If a uterine rupture is suspected during childbirth, most authors do not recommend wasting precious time on tests that are meaningless in this situation; they can be taken for intra- or postoperative analysis of the adequacy of the infusion therapy, but there is no point in wasting time waiting for their results. According to the ACOG directive, persistent bradycardia of the fetal heart rate in the presence of suspected uterine rupture or hemodynamic disturbances in the mother requires delivery by cesarean section within 10-37 minutes, with the initiation of adequate intensive fluid therapy.

The main goals of treatment are stabilization of the mother's condition and extraction of the fetus. As a rule, the time interval from the rupture to the extraction of the fetus and the start of measures to stop the bleeding, during which there is the greatest likelihood of a favorable prognosis for the mother and fetus, is only 10-37 minutes. In order to meet this period of time, it is necessary to mobilize all available capabilities - obstetric and anesthesiological.

When uterine ruptures have begun and are completed, transection is quickly performed, the purpose of which is to eliminate the source of bleeding, restore the anatomy of the pelvic organs, and prevent the spread of infection. Simultaneously with surgical care, even before the operation, during and after the operation, shock and bleeding are combated using generally accepted methods.

Thus, treatment of an ongoing and completed uterine rupture includes urgent and SIMULTANEOUS implementation of:

- surgical intervention;
- adequate anesthetic care;
- adequate blood loss and shock infusion-transfusion therapy;
- correction of hemostasis disorders.

In case of uterine rupture, transection is performed only with a lower-median incision.

After the fetus is successfully removed, the scope of surgical treatment

mother, according to ACOG[8], should depend on the following factors:

- localization of uterine rupture;
- size of uterine rupture;



- the amount of blood loss;
- general condition of the mother;
- the mother's desire for subsequent childbearing.

Recently, organ-preserving tactics have been increasingly gaining momentum.

with excision of the edges and suturing of the rupture, and preservation of reproductive function women.

There are no criteria for preference in the domestic literature organ-preserving tactics, so we decided to present the criteria recommended in the USA:

- the woman's desire for subsequent childbearing;
- the location of the gap is transverse in the lower segment;
- non-propagation of the rupture to the broad ligament area, to the cervix, in the parametrium;
- stopping bleeding;
- the mother's condition is not critical;
- absence of clinical and laboratory signs of coagulopathy.

According to the same ACOG recommendations, hysterectomy is preferable for multiple ruptures, longitudinal rupture of the uterine body, involvement in the rupture cervix.

When choosing organ-preserving tactics, the operation includes the following stages:

- in case of complete rupture of the uterus, separate sutures are applied and, if necessary, the edges are excised;
- in case of incomplete uterine rupture, first empty the hematoma, stop the bleeding by ligating the damaged vessels and inspect the rupture. Then the integrity of the uterine wall is restored;
- if the bladder rupture occurs simultaneously with uterine rupture, then it is sutured from the abdominal cavity [1]

At the end of the operation, a mandatory thorough examination of the organs is carried out abdominal cavity with subsequent drainage. Then the anterior abdominal wall is restored.

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