

Dynamic of the structure of delivery methods in women with cesarean section in anamnesis

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The article presents results of the dynamic of specific gravity of the cesarean delivery (CD) among all methods of delivery, the ratio of primary and recurrent CD, the percentage of women with scar on the uterus after the CD, who agreed to attempt the VBAC and the rate of the cases of successful vaginal birth after cesarean section (VBAC) among them.

The objective: to determine the changes in the number of women with uterine scar in the cohort of individuals who pursue their further reproductive intent and have a new pregnancy.

Materials and methods. Clinical and statistical results of the department, belonging to the 2nd level of perinatal care for the 10-year period (from 2008 to 2017).

Results. It has been established that the high rate of CD does not influence on the reduction of perinatal mortality (PM) parameters. The CD level above 20% does not influence in respect of reduction of PM, therefore it is not justified from the position of perinatal statistics. Indicator of the CD influences on intranatal component of the PM and almost does not influence on antenatal component. Growth of the index of primary CD has the basis for predicting a further increasing in the rate of repeated CD and women with «operated uterus».

Conclusion. The practice of VBAC reduces the level of operations in the department, belonging to 2nd level of perinatal care.

Key words: cesarean section, scar, vaginal births.

Optimization issues of the tactics of birth with pregnancy low and high risk is extremely important for obstetric clinics. The realities of the XXI century in the high development cities are as follows: in Ukraine grows the demographic crisis and the reproductive potential of population reduces. In this case – place and role of cesarean delivery is an important problem.

Cesarean delivery – is non-natural method of birth, the frequency of which is very bright and has uncontrolled growth every year. The paradox is that operative delivery by the CD is perceived as the most safety method of finishing of the pregnancy. In the minds of doctors and women firmly holds the point of view that the CD is a guarantee of reducing perinatal newborn mortality and morbidity, reducing the risk of obstetric traumatism and preventing the disorder of the pelvic organs [2, 3].

However, this position is not incontrovertible, and in professional circles a number of specific problems, associated with a high level of CD, are becoming more and more perceived, relevant today and in the long run. First of all, there is a paradoxical situation of the differences in everyday clinical practice, which shows from year to year an increasing of the CD rate from almost 1–3% to 30–40% and higher. According to the modern evidence-based principles, declared by World Health Organization, regarding the optimal level of operation for at least 10–15%, increasing of positive effect on maternal and perinatal mortality is absent. In this backdrop, there is a intense polemic about ways to contain the escalation of the CD, reserves for increasing the rate of physiological births and it finishing through natural ways [1, 3, 4].

Thanks to the accumulation of previously operated women, during the last decade, increased a large contingent of women with a uterine scar due to CD. On the one hand, at the same time fatally decreased the individual reproductive potential of a woman, which are reflected in the demographic prospects of the population. On the other hand, there is a peculiar «domino effect», as most of the births of such women ends with a repeated operation, and as a result, now every second operation is a consequence of the previous one, which raises the cost of medical care and the amount of postpartum complications [6].

Under these conditions, insufficiently distinct current trends regarding the frequency of CD, the practice of vaginal births after caesarean section (VBAC), their proportion in terms of delivery in the typical institution of maternity help in Ukraine, the question of the balance of the risk and the benefits of spreading of such practices. Therefore, the aim of this work – to figure out how the number of women with uterine scar changes in time in a cohort of individuals, who carry on their further reproductive intent and have a new pregnancy.

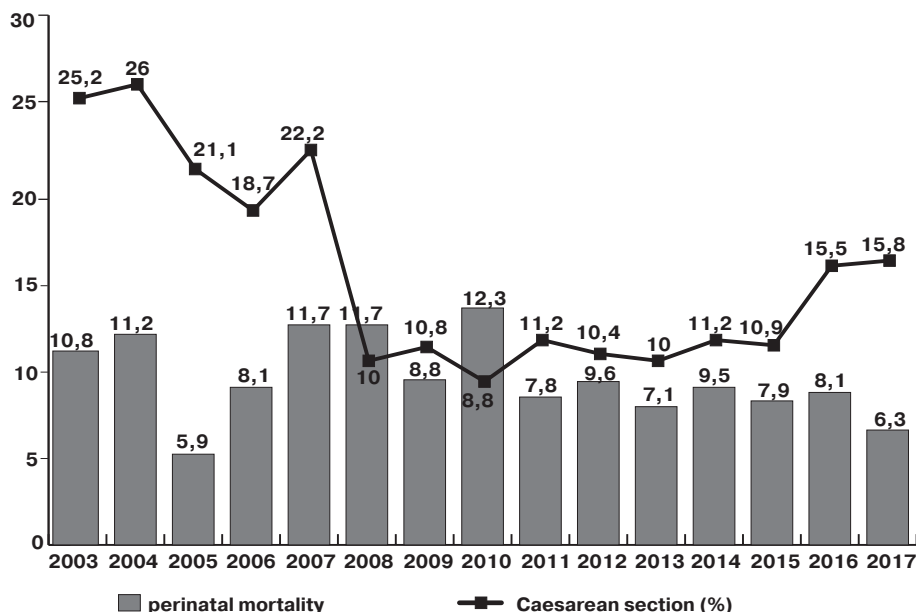
MATERIALS AND METHODS

An in-depth analysis of clinic-statistical data of the department, corresponding to 2 level of perinatal care, for the 10-year period (from 2008 to 2017) was conducted. It should be noted, that at the term 2007–2008 yy our team implemented a fundamental change in the policy of our hospital in relation to the CD – the attitude towards this operation has been worked out as being carried out with certain clinical necessity. In particular, the clinical situation «an operation CD in anamnesis» was removed from the independent indication to the repeated CD, except of the cases, in which woman have an categorical rejection relatively attempt of vaginal delivery.

This 10-year period can be divided into two parts. In the first five years (2008–2012) there was a gain to get an empirical experience in reducing the frequency of CD, in particular, through the development of skills and practice of giving birth to women with an uterine scar. It should be noted that at that time there was no such experience in the region, and in general there was a very low interest in the management of VBAC. Therefore, the introduction of guidelines for reducing the frequency of CD to a well-grounded World Health Organization (10-15%) has become a significant test for the team. In the second five-year period (2013–2017) it can be stated, that the rate of CD is stabilized, a certain increasing in the awareness of patients regarding the possibility of delivery in women with uterine scarring [6].

In order to draw a more vivid picture of the real impact of the CD frequency on perinatal statistics, it was considered useful for us to include in the development also the archival material of the previous five-year plan (2003–2007), when the maternity house held a liberal attitude towards indications for the CD. At that time, the frequency of abdominal birth was more than 20% per year.

In particular, from our work unambiguously removed the possibility of performing CD for so-called «complex» of relative indications. Given the difficulty in determining the weight of



Pic. 1. Dynamic of the proportion of cesarean section, as the methods of delivery, in comparison with the indicators of perinatal mortality for the period 2003–2017 in the maternity hospital № 6 in Kharkiv

a combination of probable risk factors, that may or may not be realized, our politic was unconditionally to avoid evidence of complications, their initial signs or clinical symptoms.

RESULTS AND DISCUSSION

The results of our research on the material of the maternity hospital №6 in Kharkiv (corresponding to 2 level of perinatal care) of the retrospective cohort study illustrate diagrams, showing the dynamic of the relative importance of CD among all methods of delivery, the ratio of primary and recurrent CD, the percentage of women with scar on the uterus after CD, who agreed to an attempt by VBAC and among them the rate of the cases of successful VBAC.

Picture 1 shows the absence of influence of the high-frequency CD, which occurred before the last decade, on perinatal mortality (PM). Thus, before 2008 the frequency of CD was in the range of 19–26% and «provided» the PM within the range of 5,9–11,7%. At the same time, the highest frequency of the CD (25,2% in 2003 and 26% in 2006) coincided with the level of the PM above 10% (correspondingly 10,8% and 11,2%).

A generalized assessment of this information allows us to join the recognition for the «optimal» at the second level of perinatal care of the CD rate – 10–15%, since such a percentage of abdominal birth does not correlate with a higher PM, as compared with the level of the CD with 20%. At the same time, the CD level above 20% does not gives a favor in the reduction of PM, and therefore, is not justified the perinatal statistic. So, during the last 10 years, the indicator PM below 10% had a place with a rate of CD relatively to the number of births per year at the level of 1,2–15,8%.

The percentage of abdominal births in maternity hospital № 6 of Kharkov, with a similar contingent of women, has been at the level of 10–15,8% in recent years. In this case, the PM parameter varies within 6,3–9,5%. However, the link between the PM with the number of implemented CD (which largely depends on the policy adopted by the team regarding the definition of obstetric and perinatal indications for the CD) is absent.

The validity of our view of the lack of an associative link between the increase in the number of CDs and the decrease in the level of PM is also due to the fact that the figures refer to one region of the same type of department belonging to the second level of perinatal care.

This is explained by the fact, that the rate of CD in modern Ukraine mainly affects the intranatal component of the PM, to a lesser extent, the early neonatal and almost does not affect the antenatal one. In this case, in the structure of the PM, the antenatal component has a decisive role.

In 2003–2007, the VBAC, as an exceptional phenomenon, took place in 2005 (0,1%) and 2007 (0,4%) in cases where «we did not have time to make a CD» – when women arrived to the hospital at the end of childbirth process.

However, there is no doubt that the high level of the CD in 2003–2007 influenced the level of the CD at a later time, as a contingent of women with operated uterus, who subsequently realized a new pregnancy and childbirth, was formed. At the same time, a significant part of them deliberately choose an elective repeated cesarean delivery (EBCD), excluding the possibility of an attempt by the VBCD.

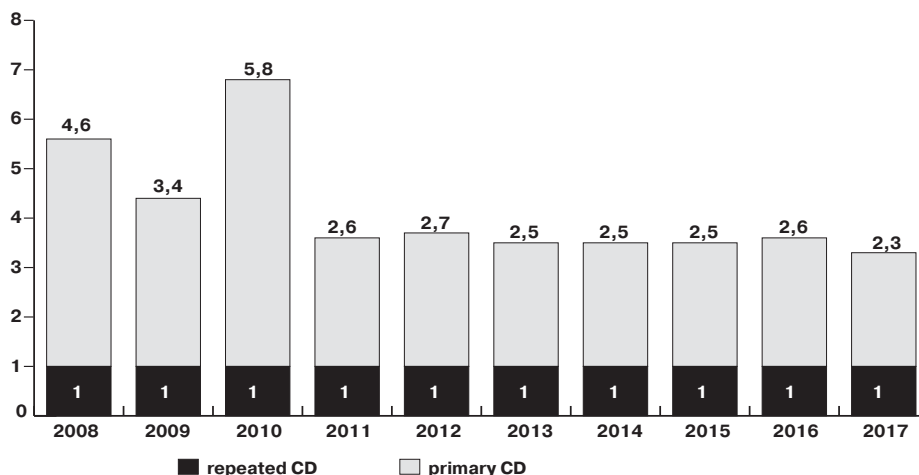
This is evidenced, first of all, by the growth of the rate of repeated CD in the overall structure of the CD, which clearly reflects pict. 2.

This picture shows how changes in the ratios between the number of primary CD and repeated CD. Information in pict. 2 illustrates the fivefold advantage of primary CD over repeated operations up to and including 2010. This fact also confirms the active formation of the contingent of women with operated uterus in the reproductive cohort due to a liberal attitude towards indications for CD, which should be manifested in the near future in the fact that the number of pregnancies in the presence of scar will increase.

The next dynamics manifested itself in the fact that, starting in 2011, after the acquired experience of controlling the frequency of CD in the hospital, the contribution of the «uterine scar» in the overall percentage of abdominal birth was almost twice as high. After 2011, by 2017, the ratio of primary and recurrent CD has changed in favor of reducing the rate of primary, in this way for one repeat CD performed an average of 2,5 primary operations.

As can be seen from the data graphically depicted in pict. 3, the increasing in the percentage of repeat CD among all deliveries is a constant trend. As a result, the rate of repeated CD increased by 2,7 times in 10 years.

The regularity of the primary CD until 2015 was stable. In the last two years (2016 and 2017) there was a significant increase in



Pict. 2. Changes in the ratio of primary and repeated operations of cesarean section during the period of 2008–2017 at the maternity hospital № 6 in Kharkiv

this indicator, which, in our opinion, reflects on the reproductive system destructive processes in the health of the childbearing generation, in particular, because of the socio-economic factor of stress and the sharp decline in living standards.

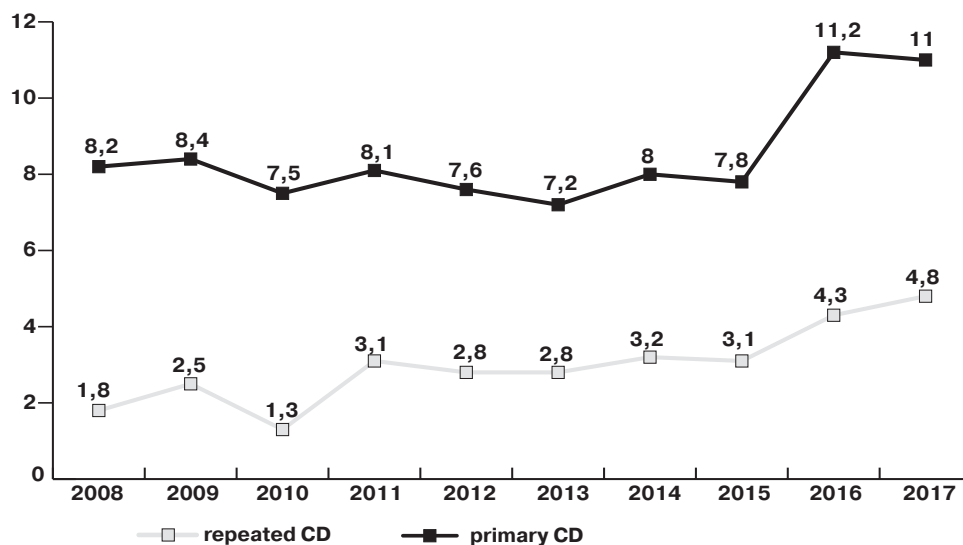
Thus, ascertaining such a tendency, we have reason to predict in the near future further increase of the rate of repeated CD in the structure of indications for the operation.

During the period of 2008–2017, 17 146 women are completed pregnancy in maternity hospital № 6. 1978 women (11,5%) have cesarean section. Of these 1978 operations, the primary CD was executed in 1458 (73,7%), repeated – in 520 cases (26,3%). Vaginal births occurred in 448 women who had a CD in anamnesis, which is 2,6% of the total number of births. In different period (2008–2017yy), the proportion of women with VBAC from the total number of deliveries ranged from 2,3% (2008, 2010, 2012, 2015) to 3,9% (2009). Consequently, the influence of VBAC on the frequency of CD in the maternity hospital N6 is actual, since the percentage of «unfulfilled repeated CD» is almost a quarter of the indicator of fulfilled abdominal delivery.

For a more representative evaluation of the contribution of the practice of VBAC to the formation of the overall frequency of

the CD, we determined a potentially reliable indicator of CD in the event when women with a CD in anamnesis would have been deliver exclusively by the EBCD. As it turned out, the number of women who had successful VBAC was 18,5% of the total (1) of the general number of patients undergoing CD (primary and recurrent), and (2) those with an uterine scar, who attempted vaginal births, that is those who had a high probability of CD («not performed repeated CD»). Thus, there are reasons to confirm that the implementation of the practice of VBAC is an effective way to reduce the frequency of CD.

We consider it possible to provide another illustration of the role of the «politics» of a particular team on the formation of index CD, using, for example, official statistics for 2017 at another hospital (third level of perinatal care, with 3791 birth and percentage of CD – 36,8%, of these, 74,6% are primary). Among the women with CD in anamnesis – only 2,5% of the VBAC were conducted (9 cases). It is problematic to imagine, that a hospital, that has its own district of care, and not only carry out the function as a perinatal center, was a collector of the opponents of the VBAC and patients with insecure scars.



Pict. 3. Dynamics of the frequency of primary and repeated cesarean sections during the period of 2008–2017 at the maternity hospital № 6 in Kharkiv

According to our information, out of 968 women with the CD in the anamnesis, successful vaginal births made 448 – 46,3%, unsuccessful attempts took place in 91 – 9,4% of the number of women with scar on the uterus, the EBCD was conducted in 429 women, equal to 44,3%. The ratio of the percentage of successful and unsuccessful attempts at VBAC is illustrated by the following information: out of 539 women who agreed to VBAC, the delivery was completed vaginally at 83,1%, while the emergency CD was needed at 16,9%, which is 5 times less. Consequently, we can state that the benefit of conducting an VBAC is five times higher than the risk of an unsuccessful attempt.

We have statistically proven an increase in the percentage of women with CD in anamnesis of the studied cohort in recent times. The dynamics of the increase in the percentage of women with the CD in anamnesis among all the women at the level of statistical reliability, we have been witnessed when comparing the indicators of 2010 – 3,6%, from 2013 – 6,2% ($\chi^2=7,6$; $p=0,006$) and in subsequent years – 7,3% in 2017 (confidence interval (CI) 0,34–0,65; $\chi^2=21,2$; $p<0,001$).

Динаміка структури методів розродження жінок з кесаревим розтином в анамнезі
Л.Г. Назаренко, К.М. Недорезова

У статті представлено результати дослідження динаміки питомих ваги кесарева розтину (КР) серед усіх методів розродження, співвідношення первинного та повторного КР, відсоток жінок з рубцем на матці після КР, які погодилися на спробу вагінальних пологів після кесарева розтину (ВПКР), та частку випадків успішних ВПКР серед них.

Мета дослідження: визначення кількості жінок з рубцем на матці в когорті осіб, які здійснюють свої подальші репродуктивні наміри та мають нову вагітність.

Матеріали та методи. Клініко-статистичні дані установи другого рівня перинатальної допомоги за 10-річний період (з 2008 до 2017 року).

Результати. Установлено, що висока частота КР не впливає на зниження показників перинатальної смертності (ПС). Рівень КР понад 20% не дає переваги стосовно зниження ПС, отже не є виправданим з позиції перинатальної статистики. Показник КР впливає на інтранатальну складову ПС і майже не позначається на антенатальній. Зростання показника первинних КР дає підстави до прогнозування подальшого збільшення частки повторних КР та жінок з «оперованою маткою».

Заключення. Практика вагінальних пологів після кесарева розтину робить вагомий внесок у справу зниження частоти операцій в установах другого рівня перинатальної допомоги.

Ключові слова: кесарів розтин, рубець, вагінальні пологи.

During the period of 2013–2017, the growth trend of «operated uterus» was preserved, however, it was not so expressive (CI 0,64–1,09; $\chi^2=1,6$; $p=0,204$). And this, in our opinion, is explained by the general negative demographic dynamics of the decline in fertility, a decrease in the number of repeated births, including in women with a scar on the uterus.

CONCLUSIONS

Consequently, at this stage, we have received confirmation of the contribution of the practice of VBAC to the moderation of the level of operations in the department which belongs to the second level of perinatal care.

It is equally important that the results, given the high level of the primary CD and the growth of the population's demand for natural childbirth, confirm the relevance of the question of patient selection, the objective assessment of the chances of a favorable course and the successful outcome of the VBAC.

Динамика структуры методов родоразрешения женщин с кесаревым сечением в анамнезе
Л.Г. Назаренко, К.М. Недорезова

В статье представлены результаты исследования динамики удельного веса кесарева сечения (КС) среди всех методов родоразрешения, соотношения первичного и повторного КС, процент женщин с рубцом на матке после КС, которые согласились на попытку вагинальных родов после кесарева сечения (ВРКС), и доля случаев успешных ВРКС среди них.

Цель исследования: определение количества женщин с рубцом на матке в когорте лиц, осуществляющих свои дальнейшие репродуктивные намерения и имеющих новую беременность.

Материалы и методы. Клинико-статистические данные учреждения второго уровня перинатальной помощи за 10-летний период (с 2008 по 2017 года).

Результаты. Установлено, что высокая частота КС не влияет на снижение показателей перинатальной смертности (ПС). Уровень КС более 20% не дает преимущества к снижению ПС, что является неоправданным с позиции перинатальной статистики. Показатель КС влияет на интранатальную составляющую ПС и почти не сказывается на антенатальной. Рост показателя первичных КС дает основание для прогнозирования дальнейшего увеличения доли повторных КС и женщин с «оперированной маткой».

Заключение. Практика вагинальных родов после кесарева сечения вносит весомый вклад в дело снижения частоты операций в учреждениях второго уровня перинатальной помощи.

Ключевые слова: кесарево сечение, рубец, вагинальные роды.

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