



**Opinion**

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## Analysis of Objective Tactics in Macrosomy



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### Opinion

In modern obstetrics, one of the causes of maternal and perinatal complications is macrosomia. According to some authors, the frequency of occurrence of macrosomia in Russia is about 12.7-15% of cases, in world statistics the frequency of large fruit varies from 2.5% to 20.7% of cases. High rates of birth trauma of the mother and fetus are not only of medical importance, but also social. Childbirth with a large fetus increases both obstetric and perinatal risks. It has been proved that in newborns weighing more than 4,000 grams, born through natural birth canals, violations such as cerebral circulation disorders and damage to the brachial plexus are more likely to occur.

The purpose of our work was to conduct a retrospective analysis of obstetric tactics in macrosomia.

### Material and Methods of Investigation

A retrospective analysis of 110 birth and neonatal histories was conducted, including 80 birth and development histories of a newborn with a large fetus (main group) and 30 birth histories and development histories of a newborn with a normal body weight of the newborn (control group) for 2016.

### Results and discussion

The average age of the patients in the 1st group was  $30 \pm 1.7$  years, in the second group -  $26 \pm 1.2$  years. In the main group, the number of primigravida was 19.2% (24 patients); multigravida, primiparous - 3.7% (3 patients) and multiparous - 67.5% (54 patients), 9.2% (5 patients) of them with high parity (4 or more labor), in the control group, respectively 60% (18 patients), 16.6% (5 patients) and 23.3% (7 patients). There were no pregnant women with high parity in the control group. More often, the multiparas were observed in the main group compared with the control group ( $p < 0.05$ ). Studying the family hereditary history of disease of pregnant women, in the 1st group we identified type II diabetes in 6.2% of cases and arterial hypertension in 3.7% of cases; in the 2nd group there the family hereditary anamnesis was not burdened. The body mass index (BMI) in the main group

was  $26.4 \pm 4.5 \text{ kg/m}^2$ , in the control group -  $22.3 \pm 4.2 \text{ kg/m}^2$ , while the pregnant women with the initial normal BMI in the control group were 82.2 %, against 52.5% in the main. The structure of complications of pregnancy in the second and third trimesters in groups had significant differences. For example, in the main group, preeclampsia occurred in 21.3% (17 cases) vs. 9.9% (3 cases) in the control group ( $p < 0.05$ ). This fact is explained by the presence of constitutional features of the patients of the main group, in 47.5% of pregnant BMI before pregnancy indicated the presence of excess weight. Gestational diabetes mellitus, adjusted by diet therapy in 8.8% (7 cases), was revealed only in the main group. Polyhydramnios were significantly more often noted in the main group - 13.75% (11 cases), in the control group - 6.7% (2 cases) ( $p < 0.05$ ). The combination of polyhydramnios and gestational diabetes was observed in 4 (5%) cases in group 1. Delivery in time in the main and control groups is 100%, in view of the exclusion from the analysis groups of preterm labor. In the 1st group, spontaneous delivery was 71.3% (57 deliveries), delivery by cesarean section 28.8% (23 deliveries), in the 2nd group, deliveries through natural birth canals were 86.6% (26 births), cesarean section - 13.3% (4 genera). Abdominal delivery in the first order in the first group was performed in 7 patients, which was 30.4%, respectively, in urgent order in 16 parturient women (69.6%). In 9 cases, the indication for emergency delivery was a clinically narrow pelvis, in 4 cases - the weakness of labor and in 3 cases - the combination of a large fetus, premature rupture of amniotic fluid, and the "immature" cervix. The structure of indications for planned delivery in the main group was as follows: a scar on the uterus after a caesarean section operation and combined indications (infertility, IVF, perinatal losses) - 3 cases; the weakness of labor and the tendency to overstate pregnancy (gestation period  $> 41$  weeks, biologically "immature" cervix) - 1 case. In the control group, abdominal delivery was planned in 3 patients (75%), the indications were: a gestation period of 42 weeks and a biologically "immature" cervix, a mixed breech presentation and an estimated fetal weight of 3800, 1 patient (25%) was urgently given birth, the indication for the operation was: acute hypoxia of the fetus. The analysis of births through natural birth canals in the study groups showed

that there were no significant differences in the total length of labor in the study groups, however, the duration of the II stage of labor is of interest: in the first group in primipara it was 1 hour 57 minutes  $\pm$  12 minutes, in the rabbits 1 hour 2 minutes  $\pm$  23 minutes, and in the second group in the primipara the second period of labor was 1 hour 03 minutes  $\pm$  15 minutes, and in the reproducible 27 minutes  $\pm$  9 minutes. From which it should be concluded that during macrosomia the second period of labor is longer in comparison with the births with a normal fetal mass, the advance of the head through the birth canal slows down in the second period, and this fact requires the obstetrician to closely monitor the woman in labor, in order to timely diagnose complications, in first of all, clinical inconsistencies. In the structure of complications of labor in the main group, premature outpouring of amniotic fluid is the first place, registered in 15% of cases (in 12 patients), which is significantly more frequent than in the control group in 2 patients (6.6%) ( $p < 0.05$ ) and corresponds to the literature data.

The untimely outflow of amniotic fluid is explained by the absence of a contact belt in macrosomia. Weakness of labor in the study groups was found without significant differences: in 7 (8.8%) patients of the 1st group, and in 3 (9.9%) patients of the 2nd group. Birth traumatism in the form of rupture of the perineum I-II st. in the first group was significantly more likely than in the second group - 25% (in 20 parturient women) and 6.7% (in 2 parturient women), respectively ( $p < 0.05$ ). Episiotomy in the study groups was performed significantly more often in the 1st group - 28.7% (in 23 parturient women) than in the 2nd group - 13.3% (in 4 parturient women) ( $p < 0.05$ ). Cervical rupture of I-II st met only in the main group in 3 patients, which amounted to 3.8% of cases. There were no cases of rupture of the uterus in the study groups, from which it should be concluded that the delivery was timely by cesarean section with clinical mismatch in Group 1 and careful selection of patients for planned abdominal delivery, assessing risk factors in patients with macrosomia. The volume of blood loss in the study groups did not differ significantly, but in the 1st group there was more blood loss. In childbirth through the natural birth canal, blood loss in the 1st group was: - 490ml  $\pm$  74.5ml, in the second group - 284.4  $\pm$  54.7ml. With operative delivery, the volume of blood loss is 780  $\pm$  154.5ml and 620  $\pm$  128.5ml, respectively. There were no cases of pathological hemorrhage in both groups. The expected pathological blood loss in the main group of patients with macrosomia was not allowed, assessing its risks, and taking timely preventive measures.

The mass of newborns in the 1st group was 4577.5  $\pm$  154.2g, in the 2nd - 3585.3  $\pm$  270.5g, the growth was respectively 54.313  $\pm$  1.8cm and 50.28  $\pm$  2.2cm. The birth of giant fruits in the

main group was not observed. The Apgar score in the main group at the 1st minute was 7.3  $\pm$  0.7 points, at the 5-1 minute 8.8  $\pm$  0.4 points, in the control group, respectively, 9.0  $\pm$  0.5 and 9.5  $\pm$  0.7 points. In the first group, 2 births of newborns were recorded in an average degree of asphyxia with an Apgar score of 6 points in the 1st minute and 7 points in the 5th minute. In the first case, the parental incubation lasted 9 hours and 10 minutes, with the opening of the uterine pharynx 7cm, meconial amniotic fluid flowed, the second period of labor lasted 40 minutes, the anhydrous interval was 2 hours and 10 minutes. The weight of the child at birth was 4500g, height 55cm. Apgar score at the 1st minute 6 points, in the 5th minute - 7 points. The condition of the child is regarded as a severe, aspiration-induced meconial amniotic fluid, in the birth department, resuscitation was carried out, including intubation of the trachea and transfer to mechanical ventilation. The newborn on the 4th day was transferred to the Department of Pathology of Newborn Children's Hospital. Diagnosis in translation: Aspiration pneumonia. Aspiration syndrome with meconial waters. Hypoxic-ischemic lesions of the central nervous system. In the second case, the birth was also repeated, the total length of labor was 6 hours and 50 minutes, the second period of labor lasted 20 minutes. The anhydrous interval was 20 minutes. A child was born with a mass of 4380g, 52cm, an Apgar score of 6-7 points. The condition is estimated at birth as a severe, aspiration-induced meconial amniotic fluid. The newborn was also transferred to the department of neonatal pathology. Diagnosis in translation: Aspiration pneumonia. Aspiration syndrome with meconial o/water. Hypoxic-ischemic lesions of the central nervous system. The syndrome of oppression.

### Conclusion

Abdominal delivery for emergency indications was reliably more often performed in the main group, and in the structure of the indications for delivery the clinically narrow pelvis was leading. The total length of labor in the study groups did not have significant differences, while the second period of labor in the 1st group was longer than in the 2nd group. Maternal traumatism occurred in both study groups. However, the rupture of the perineum I-II degree was diagnosed more reliably, and episiotomy in the main study group was performed. Neonatal complications, fetal birth trauma and neurological disorders are also more reliably detected in the 1st group. The result of the study is the determination of the mass of the newborn in 4300 and more, at which the frequency of these complications increases. Thus, our analysis once again showed that pregnancy, childbirth and the postnatal period with macrosomia have high risks of obstetric and perinatal complications increase the frequency of operative delivery, birth trauma.



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