

BIRTH TRAUMA OF A NEWBORN: A PROBLEM OF OBSTETRICS AND NEONATOLOGY

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ABSTRACT

Birth trauma (BT) in the structure of morbidity of newborns is 26.3-1.9%, and in deceased full-term newborns - 37.9%. Perinatal lesions of the nervous system lead to disability in 35-40% of cases due to both mechanical damage and various disorders of cerebral hemodynamics. Treatment of BT in newborns is carried out differentially taking into account the type and severity of damage. The main risk factors influencing the development of BT in newborns are pregnancy complications such as large fetal weight and preeclampsia, as well as some complications during labor: premature rupture of membranes, abnormal labor, and disruption of the biomechanism of labor.

Keywords: cephalohematoma, birth trauma, clavicle fracture, cerebral palsy, preeclampsia.

INTRODUCTION

BT in the structure of morbidity in newborns is 26.3-41.9%, and in deceased full-term newborns - 37.9% [1]. According to E.P. Sushko et al., the frequency of BT is 3-8% among all born children. Perinatal lesions of the nervous system lead to disability in 35-40% of cases [2]. Among all perinatal factors contributing to the development of cerebral palsy and other lesions of the nervous system in children, the most important is the birth trauma factor, causing both mechanical damage and various disorders of cerebral hemodynamics [3].

MATERIALS AND METHODS

BT of newborns - various fetal injuries that occur during the birth process. Among BT of newborns there are injuries to soft tissues (skin, subcutaneous tissue, muscles), skeletal system, internal organs, central and peripheral nervous system. BT of newborns is diagnosed taking into account the obstetric and gynecological history of the mother, the characteristics of the course of labor, examination data of the newborn and additional studies (EEG, ultrasound, radiography, ophthalmoscopy, etc.). Treatment of BT of newborns is carried out differentially taking into account the type and severity of the injury.

RESULTS AND DISCUSSION

BT is diagnosed in 8-11% of newborns, often combined with birth injuries of the mother (ruptures of the vulva, vagina, perineum, uterus, urogenital and vaginal-rectal fistulas, etc.). The causes of birth injuries during pregnancy can be: the presence of extragenital pathology, pregnancy complications, especially chronic uteroplacental insufficiency, leading to the development of chronic fetal hypoxia and its hypotrophy, low social status and bad habits of

the pregnant woman, such as smoking, alcohol abuse, drug addiction. Poor nutrition of the pregnant woman and occupational hazards also play a role. During labor, the formation of BT in newborns is influenced by: excessive force of muscular contractions of the uterus in a situation predisposing to injury, abnormal positioning of the fetus, its large mass, decrease in size and rigidity of the birth canal, prolonged, rapid and precipitous labor.

Predisposing conditions (long-term hypoxia, impaired nutrition and growth of the fetus, intrauterine infections, prematurity) during pregnancy and childbirth increase the likelihood of birth trauma even in the normal course of labor.

An important role in the occurrence of BT is played by a violation of the biomechanism of labor during labor, especially with breech presentation of the fetus and extension insertions, and errors in the provision of obstetric care in the second stage of labor.

BT of newborns can have a serious impact on the further physical health and intellectual development of the child. All this makes birth trauma one of the most pressing problems of obstetrics and gynecology, neonatology and pediatrics, child neurology and traumatology.

Clinical forms of birth trauma in newborns

Depending on the location of the injury and the predominant impairment of functions, the following types of birth trauma in newborns are distinguished:

- soft tissues (skin, subcutaneous tissue, muscles, birth tumor);
- musculoskeletal system (cracks and fractures of the clavicle, humerus and femur; traumatic epiphysiolysis of the humerus, subluxation of the CI-CII joints, damage to the bones of the skull, cephalohematoma, etc.);
- internal organs (hemorrhages into internal organs: liver, spleen, adrenal glands);
- central and peripheral nervous system:
 - a) intracranial (epidural, subdural, subarachnoid, intraventricular hemorrhages);
 - b) spinal cord (hemorrhages into the spinal cord and its membranes);
 - c) peripheral nervous system (damage to the brachial plexus – Duchenne-Erb paresis/paralysis or Dejerine-Klumpke paralysis, total paralysis, diaphragm paresis, damage to the facial nerve, etc.).

In 2023, 2820 children were born alive in the maternity hospital, of which 1306 had various diseases. 132 children were born with BT, which amounted to 10.1% of all morbidity. Birth trauma ranks 6th in the structure of overall morbidity. Compared to 2022, in 2023 the percentage of injuries is slightly lower (in 2022, 2993 children were born, of which 158 had injuries, which amounted to 11% of all morbidity). Probably, the reasons for the decrease in birth trauma are the increase in the level of personnel qualifications, changes in approaches to childbirth management, taking into account the developed clinical protocols. Among the 132 children born with injuries, there were 59 (44.8%) boys and 73 (55.2%) girls. 74 newborns with concomitant diseases and combined injuries were transferred to the hospital. The remaining 58 children were discharged home under the supervision of a local pediatrician.

In the maternity hospital structure of the Andijan in 2023, the leading places are occupied by cephalhematomas (49.3%) and clavicle fractures (23.5%).

Four newborns (10.5%) were born by cesarean section, the remaining 118 - through the natural birth canal. Of the total number of newborns, 128 were full-term (97.4%), and 4 were premature (2.6%). When analyzing the structure of BT, the most common BT are of the skull:

cephalohematomas in 65 (49.3%) newborns, in 2nd place are fractures of the clavicles (31 (23.5%) children), in 3rd place are injuries to the central and peripheral nervous system: in 4 (3%) - Erb's paresis, in 17 (12.8%) - damage to the cervical vertebrae, in 15 (11.4%) - combined BT.

When analyzing the histories of births that ended with the formation of BT in a newborn, the following most common pregnancy complications were identified: preeclampsia - in 34 (26%) mothers, narrow pelvis - in 7 (5.3%), fetal weight exceeded the average in 59 (44.7%) cases. Among the complications of childbirth, violations of the biomechanism of childbirth were identified in 21 (15.8%) cases, primary weakness of labor - in 10 (7.9%). Characteristic was the presence of premature rupture of membranes (both prenatal and early) in many of the examined mothers (45 (34.2%)). In 3 cases, labor was rapid. Thus, the main risk factors influencing the formation of BT in newborns are pregnancy complications, especially large fetal weight, preeclampsia accompanied by uteroplacental insufficiency, and among the complications of labor, premature rupture of membranes, labor anomalies, and disruption of the biomechanism of labor are noted.

CONCLUSION

Therefore, in order to reduce birth trauma, a modern maternity hospital must:

- Perform early diagnosis of fetal hypoxia;
- Implement rational management of labor with a large fetal weight with a timely decision on changing the tactics of labor;
- Constantly improve the professional skills of doctors and midwives in providing obstetric care;
- Introduce modern perinatal technologies and achievements of clinical neonatology into practice.

REFERENCES

1. Kravchenko E.N. Birth injury: obstetric and perinatal aspects. Moscow: GEO-TAR-Media, 2019. 240 p.
2. Zedgenizova E.V., Ivanov D.O., Prima N.F., Petrenko Yu.V. Features of cerebral blood flow and central hemodynamics in children born with intrauterine growth retardation (IUGR) // Bulletin of the Federal Center of Heart, Blood and Endocrinology named after V.A. Almazov. 2012. No. 3. P. 76–82
3. Ivanov D.O. Neurological disorders in premature infants who suffered an infectious and septic process in the neonatal period // Bulletin of the Federal Center of Heart, Blood and Endocrinology named after V.A. Almazova. 2012. No. 1. P. 69–73
4. Kurzina E.A., Zhidkova O.B., Ivanov D.O. et al. Health status prognosis in follow-up of children with severe perinatal pathology // Pediatric Medicine of the North-West. 2010. No. 1. P. 22–27
5. Surkov D.N., Kapustina O.G., Duka I.G. et al. Postmortem diagnostics of birth injury: rupture of the tentorium cerebelli in a full-term newborn with severe bronchopulmonary dysplasia // Translational Medicine. 2012. No. 4 (15). P. 42–46.