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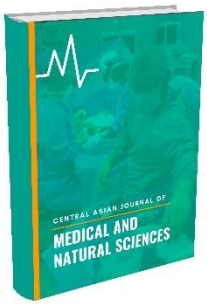

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Modern clinical diagnostic concepts about congenital brain defects

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ABSTRACT: Childhood disability remains the basis for the formation of disability in the adult population. Of all the causes of disability, more than half belongs to congenital and hereditary, 80%, in the structure of the disease there is a connection with perinatal pathology. According to scientific literature, 15 million children with congenital anomalies are born annually in the world. At the same time, it is obvious that the proportion of congenital malformations depends in direct proportion to the percentage of mortality, from asphyxia, infections and birth trauma, below the second, the defect increases. The number of congenital malformations incompatible with life, mostly depends on the defect of the brain (l). According to the WHO, of the causal factors, the main ones are the mother's disease, environmental factors, chromosomal mutations. In recent years, the frequency of morphological malformations in children, especially under one-year-old, has been increasing in the population. Thus, interest in congenital malformations of the brain remains relevant in the structure of disability in children. In combination with malformations of the brain, the severity of the condition is aggravated by cardiopulmonary insufficiency, developmental anomalies at birth (l). The average frequency of congenital malformations of the central nervous system is 2-3 per thousand born children. But these figures can be real, how to focus on the malformations of the brain at the birth of such children, falls on indirect signs, for example, the size of the skull (microcephaly, hydrocephalus), or another of the important points is the syndrome of oppression and excitement, convulsive activity (readiness) (l).

KEYWORDS: Covid-19, rehabilitation, prevention, healthy lifestyle

INTRODUCTION

Traditionally, neurosonography, an affordable, safe and minimally invasive method, is used as the main method for early diagnosis of structural brain lesions. More informative, of course, is the neuroimaging method, based on MRI, the structure of changes in the central nervous system is fully studied. This method shows in detail the anatomical structure of the cerebral defect, in various planes and with high tissue contrast. The indications for the research data are the neurological symptoms of a child with congenital brain defects, to clarify the clinic and diagnose after therapy.

Aim. To study the clinical and neurological symptoms of children with congenital malformations of the brain.

Material and research methods.

Children in the maternity ward of the 1st clinic of SamMI in Samarkand were subject to examination. Out of 80 children, after the first stage of the study, a sample was made of children with cerebral defects in conjunction with defects of internal organs of 40 children, the study was carried out for the period 2018-2020. Children were observed in the dynamics of the performed therapeutic procedures. At the initial stage, the obstetric analysis of the mother, hereditary predisposition (related marriages) were studied in detail. The assessment of the Angar scale, neurological examination, assessment of somatic status were important. Laboratory tests, neurosonography and neuroimaging were taken into account. In the follow-up, the study was repeated, neurological status, laboratory and instrumental methods. The complex of examinations used made it possible to diagnose and verify the morphofunctional nature of brain and internal organ lesions, to carry out differential diagnostics with other perinatal disorders in children under one year old.

Research result.

The reasons causing and influencing the ontogenesis of neurological development, its disorders are divided into prenatal and postnatal. An important factor in these structures is the value of full-term and premature babies. The age contingent of the mother, the older, the more difficult pregnancy and childbirth are, in our observation these were women over 30 years old - 22 mothers. Premature babies, as usual, were born to women with poor physical health (kidney disease, liver disease, diabetes mellitus, obesity). A burdened gynecological history more often occurred in mothers who gave birth to premature babies in 15.6%, compared with mothers of full-term babies. Gynecological complication was mainly associated with infection of the urogenital sphere in 37.9% of mothers who gave birth prematurely, and in mothers who gave birth on time, infection was detected in 7.1% of cases. Urogenital infection is a TORCH infection (primarily cytomegalovirus). All these factors lead to a complication of pregnancy, threatening pregnancy, placental abruption, hypotonic bleeding, and, as a consequence, fetal hypoxia, early births outside the term. The severity level of children was monitored according to the traditional assessment method, the Apgar scale. Children born before 30 weeks Apgar scale are usually within 5 points, and in children born> 32 weeks Apgar scale is higher than 5 points and more often these are children in moderately severe condition. During the examination of children in dynamics, aged 2-3 months, signs of neurological disorders characteristic of perinatal encephalopathy were found. This syndromic complex at one time was ambiguous for mature and premature children, in terms of severity and characteristics. So, in children born prematurely, hypoxic brain damage was superimposed on the immaturity of the nervous system. The

developmental lag of children was not only of a functional nature, but had clear organic changes. The most common symptom presented in the form of complaints from parents is chin tremor and intermittent tremor of the limbs, in the form of small twitching, in our observation, in 70% of cases of premature babies. Strabismus, sometimes not permanent, was also a frequent concern of parents in 22% of premature babies. Nystagmus was found in 3 children, of which one child has a permanent large-sweeping, congenital. In a more in-depth examination in the period of 6-7 months, symptoms of decreased motor activity, muscle hypotension and hyporeflexia in 56% of cases of premature babies were clearly manifested. In the group of full-term babies, the most frequent manifestation of the syndrome of oppression was especially pronounced in children born by cesarean section, in 79%. The combination of neurological symptoms, impairment with comorbidity of somatic signs (yellowness, marbling and grayness of the skin), in the worst case, intrauterine pneumonia or cardiac thresholds, all this made it difficult to diagnose the neurological clinic. Additional research methods in such cases solve the problem of making a diagnosis. When conducting an MRI study, the indicators of neurological central disorders sometimes do not coincide with clinical signs. At the heart of undifferentiated pathology are quite gross morphological disorders of the cerebral structures of the brain. These were congenital malformations of the brain in combination with hypoxic damage, which confirms the data of many literary sources. The analysis revealed the following defects, destructive brain lesions, including hydrocephalus in 7 children, encephalomalacia in 5 children, in a greater number of hypoxic-ischemic brain damage in 17 cases; violation of the formation of the brain structure in the form of schizencephaly in 1 patient; microcephaly in 4 cases, cortical dysplasia in 1 child. Cystic changes, for example, arachnoid temporal lobe in 2 children, cyst of a transparent septum in 3 cases.

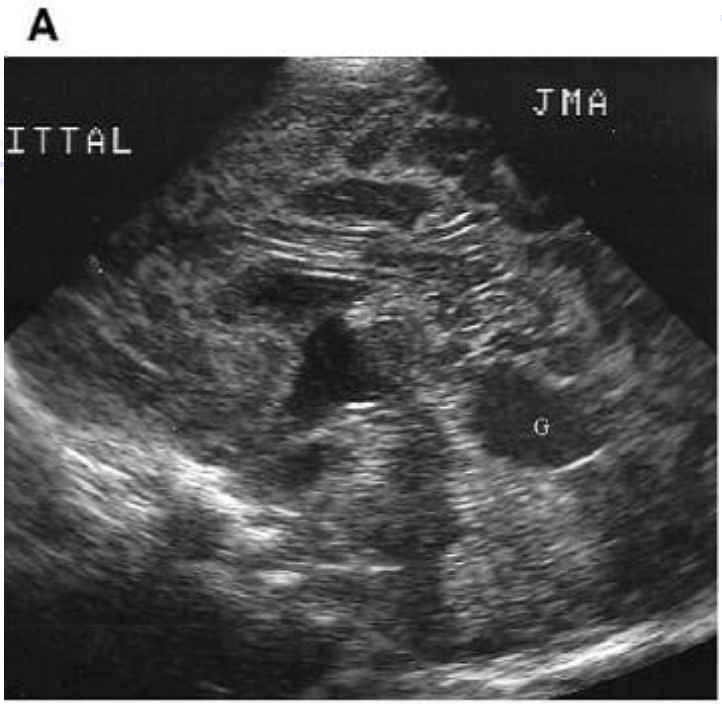

Figure: 1. Malformations in a child of 6 months.

The neurosonography method is more accessible, especially as a prediction of research results. Visualization is important because of the fragility of the membranes over exposed brain structures.

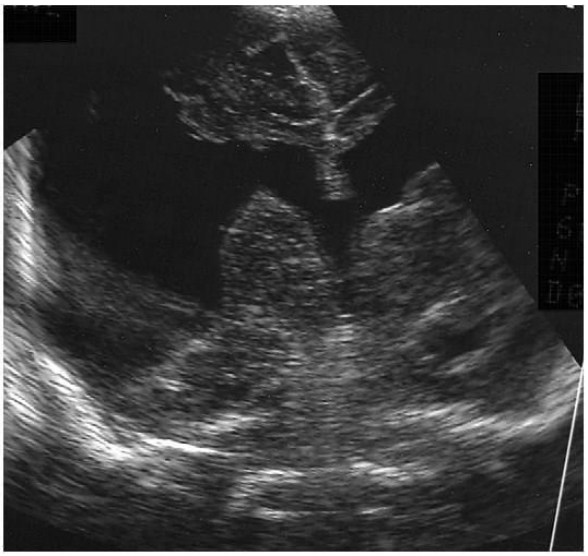

Figure: 3. Schizencephaly in a 6 month old child.

In cases of hydrocephalus and dysgenesis of the corpus callosum, the image easily compares the size of the ventricles. According to MRI data, intraventricular hemorrhage was found in 2.3%. In our cases, hydrocephalus was caused by stenosis of the aqueduct (out of 7 children according to MRI data in 4 children). Of the malformations of the brain, one can say that cerebellar anomalies are successful and promising as a diagnosis; in these cases, neurosonography provides an accurate diagnosis. So, the Depdy-Walker variant, consisting of a cyst of the fourth ventricle, was found in 2 cases, which was not found on an MRI study, that is, these data can be considered a find. In the fifth month of a child's life, neuronal migration occurs, these anomalies represent a genetic defect in development, are present in epileptic syndrome and developmental delay. Migration delay sites are only detected by high-frequency sensors, as they are similar to the normal state of the brain. Acute ischemic cerebral circulation disorder in the basin of the right posterior cerebral artery with damage to the right thalamic region was detected in 1 child. In our examination, agiria (smooth brain) was found in 2 children. A brain defect in the form of a splitting of the brain (schizencephaly), a spliced cleft, was found in 3 children, whose clinic resembled neural aliatrophy due to the severity of muscle hypotension, but the diagnosis was not confirmed, the children were diagnosed with atonic cerebral palsy..

Thus, when diagnosing a congenital malformation of the brain in children, one should not be limited to examining the neurological status, in which the fact of mental retardation, lagging sensorimotor disorders and seizures may be common for children with pre- and perinatal burdened anamnesis. The diagnosis must be accurate, about the structure of the brain (deformation, location, abnormal development). Consequently, neurosonography is a screening method for diagnosing congenital cerebral defects; in its own way, the most informative is neuroimaging of MRI studies, which makes it possible to identify hypoplasia of individual brain structures and in general. The

combination in the complex of clinical changes (delayed psychomotor development), instrumental research methods (NSG, MRI) is necessary to identify congenital malformations of the brain, the standard diagnosis of perinatal encephalopathy requires a more detailed approach at the present stage, with the solution of treatment tactics and prevention of this pathology.

CONCLUSION

1. Children with a delay in psychoverbal and sensorimotor development are doomed to receive treatment for hypoxic lesions of the brain, as long as the timely diagnosis of malformations is carried out.

2. Organogenesis of cerebral disorders is detected in young children, and neurosonography and neuroimaging (MRI) methods of the brain of children are highly informative and available for identifying verification of malformation of the central nervous system.

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