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AFFECTIVE RESPIRATORY ATTACKS IN CHILDREN WITH IRON DEFICIENCY ANEMIA

Relevance: Affective respiratory seizures (ARS) are a significant problem in pediatrics. These seizures are episodic short-term respiratory arrest in children that occur during intense emotional arousal, such as crying, severe pain, or fright.

ARS is most common in children aged 6 months to 1.5 years and affects about 5% of children. Seizures are extremely rare after the age of five. 1 It is important to note that gender characteristics do not affect the frequency of pathology, however, in boys the manifestations more often disappear by the age of 3, and in girls – by 4-5 years.

ARS can be caused by various factors, including the type of higher nervous activity, hereditary predisposition, and parenting errors. In most cases, seizures do not pose a danger to the child's health, but they can cause significant concern to parents and others.

ARS can be classified into four types:

Cyanotic type: This type is characterized by sudden respiratory arrest, which leads to cyanosis of the skin and mucous membranes. It usually occurs when crying or screaming violently.

Pale type: With this type, the child's skin becomes pale and he may lose consciousness. This often happens with sudden pain or fright.

Mixed type: Includes signs of both cyanotic and pale types.

Atypical type: Includes various manifestations that do not correspond to the types described above.

ARS may be associated with iron deficiency, so it is important to diagnose and treat anemia in children with such attacks. In most cases, ARPS do not require special treatment and resolve on their own as the child grows up. However, in some cases, it may be necessary to consult a neurologist or psychologist to rule out other pathologies and develop a behavioral strategy for parents.

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Symptoms of ARS in children

Affective-respiratory symptoms begin with crying, fright, and pain. The child breathes intermittently, suddenly stops, freezes, mouth remains open. There are wheezing, hissing, and clicks. The manifestations of apnea are involuntary. Breathing is interrupted for a period of 10 seconds to 1 minute. A simple attack ends after 10-15 seconds, and there are no additional symptoms. Apnea after a fall or impact is accompanied by paleness of the skin and mucous membranes. The pain reaction develops very quickly, there is no crying or the first sobs are heard. Fainting occurs, the pulse is weak or not palpable.

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Affective respiratory syndrome with negative emotions – resentment, rage, frustration – is typical for children aged 1.5-2 years. Respiratory arrest occurs at the moment of intense crying, screaming. It is accompanied by blue skin, simultaneous hypertension or a sharp decrease in muscle tone. The child's body arches or goes limp. Clonic convulsive muscle contractions (twitching) are less common. In all cases, there is an independent restoration of the breathing process, the color of the skin normalizes, and seizures disappear. After a simple attack, the child quickly recovers – begins to play, run, and asks for food. Prolonged seizures with loss of consciousness and seizures require a longer recovery. After the apnea is over, the child cries softly and falls asleep for 2-3 hours.

Complications

Affective respiratory syndrome does not pose an immediate danger to the child. Without adequate treatment, there is a risk of developing epilepsy. Among patients with this disease, a history of respiratory arrest is 5 times more common than in the general population. This feature is explained by the innate ability of the brain to react sensitively to external and internal factors. Side effects of affective respiratory syndrome are oxygen starvation of the brain, exhaustion of the central nervous system, manifested by asthenia, disorders of memory, attention, and mental activity.

Diagnostics

Clinical, instrumental, and physical methods are used to diagnose affective respiratory syndrome and differentiate it from other diseases associated with respiratory disorders and seizures. The leading specialists are a psychiatrist and a neurologist. The diagnostic algorithm includes the following techniques:

Survey. The neurologist and psychiatrist listen to the parent's complaints, ask clarifying questions about the symptoms of seizures, duration, frequency, and causes. Primary differential diagnosis of ARS and epilepsy is performed. The main criteria are spontaneity / provocation of paroxysms, increased frequency of arousal / independence from the general condition, stereotyping / variability of seizures, age under 5 years / older.

Inspection. A mandatory physical examination is performed by a neurologist. The specialist evaluates the safety of reflexes, sensitivity, formation of motor functions, confirms the absence or presence of neurological pathology. With an unclear clinical picture, paucity of parental complaints, and a burdened family history, a cardiologist, pulmonologist, and allergist are prescribed to rule out cardiovascular diseases, bronchial asthma, allergies, and apnea syndrome in premature and underweight children.

Instrumental methods. Electroencephalography is performed to distinguish affective respiratory syndrome from epilepsy. Increased bioelectric activity is not typical for ARS. Electrocardiography allows you to exclude heart diseases accompanied by respiratory arrest. Spirography is used to assess lung function and identify the cause of respiratory spasm.

The aim of the study was to determine the role of hypochromic anemia in young children in the development of affective respiratory seizures, to identify the frequency of ARS in the presence of hypochromic and iron deficiency anemia.

Materials and methods: an analysis of medical records for 2020-2024 was carried out on the basis of the Furkat children's multidisciplinary hospital. The study included 22 children with ARS. All children underwent somatic and neurological status assessment, blood, EEG, and NG examination.

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Results: blood hemoglobin was tested in all children, of which only one (4.5%) had iron levels checked in the blood serum. Hypochromic anemia was detected in 9 children (40.9%), and IDA was detected in 4.5% of patients (1 child). Of the patients with hypochromic anemia, 3 (30%) children had seizures with loss of consciousness, and 4 (40%) patients had seizures more than once a day. Of the patients without anemia, 33.3% have children ARS was severe.

Conclusions:

1. In 40.9% of patients suffering from affective respiratory seizures, hypochromic anemia was detected.

2. With hypochromic anemia, 38.9% of the examined had affective respiratory seizures in severe form. whereas in children without hypochromic anemia, a severe course of the disease was noted only in 33.3% of cases.

3. Since IDA can occur in a latent form, i.e. without hypochromia, it is necessary to determine the level of iron in the blood serum in all children with ARP.

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