SUBCORTICAL DYSARTHRIA: CLINICAL DESCRIPTION

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Abstract: This article provides a scientific analysis of the clinical characteristics of subcortical dysarthria, its pathophysiological mechanisms, and speech disorders resulting from lesions of the central nervous system at the level of the basal nuclei. Hyperkinesias, changes in muscle tone, incoordination of articulatory movements, disorders of timbre and intonation, as well as instability of speech rhythm, characteristic of subcortical dysarthria, are described as clinical signs. Speech manifestations of subcortical dysarthria typical of dystonic, athetoid, and hemiballistic forms, changes in the phonation process, and logopedic-diagnostic criteria are also analyzed on a theoretical basis. The article provides scientific information on the neurological basis of this type of dysarthria, its impact on speech motor skills, and the scientific methods of providing corrective and pedagogical assistance.

Keywords: Subcortical dysarthria, basal nuclei, hyperkinesias, muscle tone, dystonia, athetosis, hemiballism, articulatory coordination, phonation, speech timbre, rhythm disturbance, motor speech disorders, central nervous system, neurological symptoms, logopedic diagnosis, speech motor skills, pathophysiology.

Dysarthria is a complex speech disorder characterized by impaired motor functions of the speech apparatus resulting from various degrees of organic damage to the central and peripheral nervous systems. The subcortical form of dysarthria arises from damage to the basal nuclei, extrapyramidal system, and associated nerve pathways. This type is considered one of the most complex speech pathologies in neurology, speech therapy, clinical psychology, and defectology.

Subcortical dysarthria is characterized by specific clinical symptoms, motor dysfunctions, involuntary movements (hyperkinesias), changes in muscle tone, and

disruption of speech rhythm and timbre. This article details the scientific and theoretical foundations of subcortical dysarthria, its clinical manifestations, impact on the speech process, diagnostic criteria, speech therapy correction, and modern scientific perspectives. The pathogenesis of subcortical dysarthria is directly related to the dysfunction of the basal nuclei and the extrapyramidal system. Basal nuclei are structures located beneath the cerebral cortex that perform functions of automating, coordinating, and controlling muscle tone, as well as regulating involuntary movements. These include:

1. Putamen
2. Pallidum
3. Caudate nucleus
4. Subthalamic nucleus
5. Substantia nigra

When these structures are damaged, the fine motor skills, articulation coordination, phonation, breathing, and vocalization processes necessary for speech become unstable.

When the extrapyramidal system is damaged, the following motor disorders are observed:

- hyperkinesis (athetosis, dystonia, chorea, tremor)
- sudden increase or decrease in muscle tone
- imprecision of movements, jerky character
- involuntary movement of articulatory organs

These changes negatively affect both the rhythm and timbre of speech. Subcortical dysarthria can manifest clinically in many forms. These symptoms mainly arise as a result of the impact of extrapyramidal disorders on the speech apparatus.

1. Changes in speech motor skills
2. Slow, indistinct, impaired coordination of articulatory movements
3. Involuntary movements of the tongue, lips, and lower jaw
4. The tone of the articulatory muscles is uneven - at times relaxed, at others sharply tensed
5. Increased hyperkinesis during speech

Disruption of voice production in subcortical dysarthria:

- voice is uneven, comes out in spurts
- timbre can be variable - alternating between high and low, rough and resonant
- voice trembling, wheezing
- shortening of phonation duration

In subcortical dysarthria, linguistic processes may be preserved, but disruption of the motor component is the main problem. Language system: vocabulary and grammatical structure are usually preserved. Speech planning: mostly preserved, motor execution of speech: severely impaired.

Diagnosis of subcortical dysarthria is carried out in the following areas:

1. Neurological examination
2. Presence of damage to basal nuclei
3. Types of hyperkinesis
4. Changes in muscle tone

Speech therapy examination to address subcortical dysarthria:

- State of the articulation apparatus
- Phonation characteristics
- Speech tempo, rhythm, timbre
- Level of diction
- Breath-voice-articulation coordination

Subcortical dysarthria is a complex speech motor disorder associated with damage to the extrapyramidal system. In this pathology, many aspects of speech mechanisms such as articulation, breathing, voice, rhythm, tempo, and timbre are impaired. The clinical picture of subcortical dysarthria is characterized by instability of muscle tone, hyperkinesias, lack of coordination, and phonation disorders.

Early diagnosis, comprehensive speech therapy and neurological assistance, and an individualized rehabilitation program play an important role in reducing the negative consequences of this speech disorder.

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