

Morphometric Indicators of Head Parameters in Girls With Hearing Loss

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Summary. The morphometric parameters of the head of girls with hearing loss from birth to 12 years old were measured, analyzed and compared. It can be seen that with the growing age of the child, some morphometric indicators of the head grow at the same rate in different age periods of childhood, but the intensity of the growth rate of some indicators is not the same in the age periods of childhood.

Key words: hearing loss, age, parameter, head.

Relevance. Describing the characteristic features of hearing loss in childhood, otolaryngologists distinguish several groups of patients. The basis is the time of onset of deafness. This is due to the fact that the cortex of the temporal lobes - the final section of the auditory analyzer - develops in a "sounding" environment. Even if parts of the brain are damaged, the child has a chance to keep hearing: the neurons surrounding the pathological focus form new connections and take on the functions of the dead. This is the phenomenon of neuroplasticity.

There are several options for hearing loss in babies: a deaf-mute child; hearing-impaired child; late deaf child.

A deaf-mute child had a persistent, bilateral hearing impairment that arose before the formation of speech. He does not understand the addressed speech and seeks to establish communication through facial expressions, gestures, manipulations with objects.

Late deaf children lose their hearing after some kind of illness or taking ototoxic drugs. Even if hearing loss occurs after the formation of speech, the lack of rehabilitation measures at preschool age leads to intellectual decline. Over time, these children become depleted in vocabulary, pronunciation becomes incorrect. With a decrease, hearing loss at a later age, the prognosis is more favorable, but pronunciation suffers to one degree or another: articulation, intonation are disturbed, errors in stress occur, speech becomes slurred [9,13].

A hearing-impaired child perceives sounds, but the degree of impairment varies. At the debut of the disease up to 1 year, speech development suffers: the cooing gradually disappears, the baby switches to sign language. Speech acquisition is almost impossible. Signs of a later hearing loss are: poor vocabulary, word distortion, violation of the grammatical structure of the sentence, "blurred", fuzzy speech.

Early diagnosis of hearing loss in young children will allow you to start rehabilitation measures on time, not to miss the optimal time for installing a cochlear implant or reconstructive surgery.

Hearing loss can be first diagnosed at any age. Refusal of medical care leads to a worsening of the condition. Adult patients may lose their jobs or gradually lose self-care skills. Hearing loss in children often leads to speech disorders and developmental delays, in particular in the craniofacial region [11].

The craniofacial complex includes the head, face, and oral cavity and is the most distinctive of all human body structures, giving individuals unique features. Structures of the craniofacial complex such as the mandible, palate, temporomandibular joint (TMJ) and dentition offer valuable paradigms for studying development, structure, and function [5,10].

Craniofacial deafness syndrome is characterized by characteristic facial features and profound hearing loss [1,4].

The distinctive facial features of people with craniofacial deafness syndrome are the result of various anomalies in the development of the skull and face. Deaf children often have underdeveloped or absent nasal bones, resulting in a small nose, thin nostrils, and a flattened midface with a flat bridge of the nose. People with this disorder usually also have widely spaced eyes (ocular hypertelorism), constricted eye openings (narrowed palpebral fissures), a small upper jaw (maxillary hypoplasia), and a small mouth with pursed lips.

People with this condition also have profound hearing loss, which is caused by an abnormality in the inner ear (sensory deafness). Hearing loss in these people is present from birth [7,8].

Purpose of the study. The aim of this study was to measure, analyze and compare head morphometric parameters in girls with hearing loss from birth to 12 years of age.

Research methods. The study was conducted in 50 children from birth to 12 years old with hearing loss, students of the boarding school No. 123 of the Bukhara region, the indicators of the physical development of the craniofacial complex were measured - the shape of the skull was determined: longitudinal diameter, transverse size, head girth, transverse forehead size, height or vertical diameter, determined by the size of the base of the skull, length of the base of the skull, width of the base of the skull.

Research results. It can be seen that with the growing age of the child, some morphometric indicators of the head grow at the same rate in different age periods of childhood, but the intensity of the growth rate of some indicators is not the same in the age periods of childhood. Thus, in deaf and hard-of-hearing girls from newborn to 12 years of age, the morphometric indicators of the head increased in the second period of childhood compared to infancy: the head circumference and the longitudinal size of the head increased 1.5 times (32.4% - 11.5%), the transverse size of the head 1.6 times (22.2%), the transverse size of the forehead 1.8 times (25.3%), the vertical diameter of the head and the longitudinal size of the skull base 1.7 times (15.7%- 20.2 %) and the cross-sectional size of the head increased by 1.4 times (14.4%).

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