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COMPARATIVE CHARACTERISTICS OF THE ANTHROPOMETRIC PARAMETERS OF THE HEAD AND MAXILLOFACIAL REGION IN CHILDREN WITH ADENOIDS

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✓ ***Resume***

Adenoids are present in the body of absolutely every person and perform an important protective function. However, due to a number of factors in the lymphatic tissue, an inflammatory process can occur, provoking the proliferation of the nasopharyngeal tonsilThe article analyzes the literature on the anthropometric parameters of the craniofacial region of children with adenoids

Key words: adenoids, anthropometry, craniofacial region

СРАВНИТЕЛЬНАЯ АНАЛИЗ ЦЕФАЛОМЕТРИЧЕСКИХ ПАРАМЕТРОВ ГОЛОВЫ И ЧЕЛЮСТНО – ЛИЦЕВОЙ ОБЛАСТИ У ДЕТЕЙ С АДЕНОИДАМИ

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✓ ***Резюме***

Аденоиды присутствуют в организме абсолютно каждого человека и выполняют важную защитную функцию. Однако из-за ряда факторов в лимфатической ткани может возникать воспалительный процесс, провоцирующий разрастание носоглоточной миндалины. В статье анализируется литература по антропометрическим параметрам краниофациальной области детей с аденоидами, также приводится данные

Ключевые слова: аденоиды, антропометрия, краниоцефалическая область

ADENOID BOR BOLALARDA BOSH VA YUZ - JAG' SOHASINING ANTROPOMETRIK KO'RSATKICHLARINING QIYOSIY TAVSIFI

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✓ ***Rezume***

Adenoidlar har bir insonning tanasida mavjud bo'lib, muhim himoya funksiyasini bajaradi. Shu bilan birga, limfa to'qimalarida bir qator tashqi omillar tufayli yallig'lanish jarayoni paydo bo'lishi mumkin, bu esa bodomsimon bezining ko'payishini keltirib chiqaradi. Maqolada adenoidi bor bolalarning yuz - jag' sohasining antropometrik parametrlari to'g'risidagi adabiyotlar tahlil qilinadi.

Kalit so'zlar: adenoid, antropometriya, yuz – jag' sohasi

Relevance

The standard of a perfectly proportioned face is one that is distinguished by balanced individual parts and smooth outlines that form an oval.

The overall attractiveness of a face depends on all anatomical elements, including skin, subcutaneous tissue, muscles, bones, and teeth. To achieve or approach the aesthetic ideal, doctors

must have a clear idea of the proportions of facial features, the method for analyzing its defects and the possibility of using special methods for eliminating them. The etiological factors contributing to the development of dentoalveolar anomalies are numerous and varied [37].

The limits of fluctuations in the anthropometric parameters of parts of the body in children of the same age, as a rule, go beyond the fluctuations in size in children of a relatively younger or older age. This is transgressive variability, which necessitates quantitative determinations [2].

Having determined this variability in the body between healthy children and children with various diseases of the same age, it provides an early diagnosis of the lagging behind or ahead of the development of the child's body. These results are the methodological basis for the development and improvement of anthropometric methods of diagnosis and treatment of this contingent [11].

Every year all over the world the number of people with functional disorders of the musculoskeletal system is increasing, which is one of the main reasons for the decline in the working capacity and labor productivity of the adult population of the country. [one]

Dynamic clinical and anthropological observations of the development of a child are not only necessary to identify individual characteristics of growth and maturation, the pace and harmony of development [24], factors of well-being and the level of health of children, but they are also a diagnostic key to the timely solution of the question of indications for in-depth specialized examination, as well as the selection of therapeutic and preventive measures.

Anthropometry is one of the main methods of anthropological research, which consists in measuring the human body and its parts in order to establish age, sex, racial and other features of the physical structure, which makes it possible to give a quantitative characterization of their variability. Anthropometric methods are of great importance in applied anthropology, and in recent years have begun to play an important role in anthropometric (orthopedic) cosmetology [10].

By examining various ethnic, age and sex groups, and measuring the size of various parts and recording variations in the position and shape of cranial and facial structures, broad standards have been developed that describe the human head. As a specialized part of anthropometry, “human measurements”, the study of the head came to be called “craniometry” or “cephalometry” [6].

Cephalometry (measurement of craniofacial parameters), an ethnographic definition of skull morphology, has been studied by anthropologists for centuries. [36] Cephalometry is an effective method for assessing the structure of the individual's dentoalveolar system, identifying the formation features inherent in variants of dentoalveolar anomalies, and studying the changes occurring in the process of face growth [21].

Diseases of the ENT organs, in particular hypertrophy of the pharyngeal tonsil and "adenoid" growths, play an important role in changing the parameters of the face and the dentoalveolar system [21]. The trend towards an increase in the incidence of pathology of the pharyngeal tonsil in children is steadily growing, which negatively affects the formation of the structures of the nasomaxillary complex [28].

Diseases of the structures of the Valdeyer's lymphadenoid pharyngeal ring rank first among the entire ENT pathology of childhood: the proportion of children with chronic adenotonsylitis ranges from 20 to 50%, and among children who often get sick, these diseases are 37-70% [2].

Also, it was found that the frequency of this pathology detected is 398.8 cases per 1000 children in preschool age and 199.2 per 1000 among schoolchildren. In 21% of preschool children, hypertrophy of the pharyngeal tonsil was revealed, and in 3% - chronic adenoiditis. In the structure of ENT organ pathology in preschool children, adenoids account for more than half (53.1%) of all diseases. Adenoid growths (adenoides) are usually found between the ages of 3 and 15 years, but there are also younger children, as well as adults.

Adenoids are observed equally often in boys and girls, in about 3.5-8% [20]. But according to Garashchenko T.I., (2008) the greatest severity and prevalence of adenoid vegetation is observed in children aged 3-7 years. Pediatricians and ENT doctors associate these "age peaks" of reactive hyperplasia of the pharyngeal tonsil with the formation of an "immature" immune system due to the socialization of the child, that is, the expansion of external contact with the microbial environment when children enter preschool institutions or schools [3].

The pathogenesis and etiology of adenoid vegetations remain largely unclear. Adenoid growths are localized in the region of the posterior vault of the nasopharynx, but can fill its entire dome and spread along the lateral walls downward to the pharyngeal orifices of the auditory tubes .

And also, Palchun V.T. (2012) argues that adenoid vegetation (proliferation), or adenoids, is reactive hyperplasia of the pharyngeal tonsil to antigenic effects [13].

Other authors argue that in the pediatric population, the number of children with pathology of the lympharyngeal ring ranges from 50 to 70% [16]. In children of preschool and primary school age, 74.3% in the structure of diseases of the ear, throat and nose is the pathology of the pharyngeal tonsil [19]. The greatest increase in cases of hypertrophy of the pharyngeal tonsil (GGM) occurs at the age from 3 to 6 years and is up to 60% [18].

Despite the large number of scientific studies devoted to the problem of adenoids, until now there is no single point of view on the causes of pathological changes in the pharyngeal tonsil [2,4,8,9]. In children, chronic diseases of the lymphoid pharyngeal ring are characterized by certain features. According to Zicari A.M. et al., (2007) they are rarely recognized in the first 2-3 years of life, when they are more often manifested by hypertrophy of the tonsils (in most cases, these are hypertrophic tonsillitis and adenoids). However, doctors' attention is focused on such manifestations of these diseases as susceptibility to frequent respiratory viral infections (often ill children) or breathing disorders (sleep apnea, nasal breathing disorders) [40]. Since hypertrophy of the pharyngeal tonsil, which maintains a chronic rhinitis and complicates nasal breathing, helps to reduce the child's resistance to external stimuli, which leads to the development of many chronic diseases: sinusitis, tonsillitis, otitis media, lesions of the bronchopulmonary system, cardiovascular pathology and others [17].

Since the development of the dentition is influenced by many interdependent factors, the identification of morphological and functional changes in the dentition and upper respiratory tract is an important problem in theoretical and practical medicine, which has attracted the attention of many scientists today [5,26,32,39].

According to epidemiological studies, the prevalence of oral respiration among children and adolescents with adenoids can reach 55% [25,27,29]. Depending on the duration, oral breathing can cause numerous functional, structural, postural and behavioral changes, including the dentition, which is structurally and functionally closely related to the upper respiratory tract [22,35].

In research by Wyman O.A. (2009) found that if nasal breathing is partially obstructed due to large adenoids, then it leads to breathing through the mouth and a typical “adenoid face” [38]. With a long course of the disease in children, disorders in the development of the facial skeleton occur: a constantly drooping lower jaw becomes narrow and elongated, the hard palate develops incorrectly - it is formed high and narrow; due to the incorrect position of the teeth, the bite is disturbed. These changes give the face a characteristic “adenoid” appearance [20].

As well as the adenoid face according to Bonuk K., Parikh S., Bassila M. (2006) is characterized by the presence of incompetence of the upper lip, retentionally located hyoid bone, narrow upper dental arch, retro-positioned incisors of the lower jaw, increased height of the anterior surface of the face, narrow or V-shaped upper jaw, increased plane angle of the lower jaw and posterior rotating lower jaw compared to healthy children [23].

In addition, children suffering from adenoids and chronic rhinitis have difficulty in nasal breathing as a result of adenoids leading to disturbances in the structure of the facial skeleton, the so-called "adenoid" face, while the lethargy of the lips reduces the clarity of speech and impairs diction. Insufficient inclusion of resonator cavities with adenoids leads to rhinophonias. A large number of complex violations of the pronunciation side of speech determines the need to search for technical means that optimize speech therapy work. As a result of oral breathing, the child gradually begins to form a deformation of the facial skeleton. The lateral parts of the upper jaw converge, the hard palate becomes narrow, high (Gothic). There is a narrowing of the upper dentition, crowded position of the teeth of the upper jaw, and then the lower jaw. An irregular bite is formed, which provokes the emergence of complex violations of the pronunciation of sounds. Incorrect articulation and malocclusion are one of the most common causes of poor pronunciation. Abnormalities and deformities of the maxillofacial region prevent normal articulation of sounds, strengthen the habits of incorrect articulation and make it difficult to correct them. And also, in children with an open mouth and a lower position of the tongue, a lag in

the growth of the lower jaw is formed. Due to the underdevelopment of the lower jaw, an anterior position of the head is formed (tilt and advancement of the head forward) relative to the vertical of the spinal column, which leads to stoop and deterioration of physiological respiration [1].

Long-term absence of nasal breathing affects not only the development of the upper jaw, which is accompanied by a decrease in its transversal size and is a factor in the development of bilateral crossbite, but also the formation of the lower nasal passage through which the main air flow enters during inhalation [24]. Cephalometrically, it is possible to note the greater height of the anterior part of the face and the increased angle of the plane of the mandible [32].

According to Emmerich A. et al., (2004) and De Menezes V.A. et al., (2006) children with nasal breathing difficulties have a 2-2.5 times higher risk of developing dentoalveolar anomalies [26,27]. Many dentoalveolar abnormalities associated with impaired nasal breathing, such as crowding of teeth, have a high risk of recurrence after treatment [36].

At the same time, there is still no consensus among scientists about the criteria for the severity of nasal obstruction that cause changes in the maxillofacial region, development mechanisms and characteristic signs of malocclusion in violation of nasal breathing [5]. Due to breathing through the mouth, the position of the tongue downward and the balance between the tongue and the lower jaw are different compared to healthy children. This results in a lower position of the lower jaw. In this situation, a number of postural changes can occur, such as open position of the mandible and expansion of the head. Prolonged absence of nasal breathing in a child is accompanied by a violation of the interaction of the muscles of the tongue, cheeks and lips. One of the factors contributing to these disorders is hyperplasia of the nasopharyngeal tonsil, which blocks the posterior parts of the nose and nasopharynx and makes nasal breathing difficult.

Its prolonged absence affects the development of the dentition in children, causing the formation of anomalies in the occlusion of the dentition in the form of lengthening of the lower third of the face, impaired lip closure, labial displacement of the maxillary incisors, V-shaped narrowing of the maxillary dental arch [7].

Therefore, an open mouth and, as a result, the child's mouth breathing is the cause and effect of many myofunctional disorders. Over the past 10–15 years, the number of children who have fixed the habitual open position of the mouth has increased, which results in a restructuring of the breathing type: the child switches from the physiological nasal breathing type to the pathological oral breathing type [1].

There is evidence of improved growth in children after tonsillectomy and / or adenoidectomy [40].

Among children with ATH, growth retardation was at least double the expected rate, and adenotonsilectomy had a valuable beneficial effect on children with adenoids [24].

An increase in the height of the front of the face may be due to nasal congestion caused by chronic mouth breathing [33].

After adenoidectomy and relief of nasal breathing, accelerated growth of the mandible and closure of the mandibular plane angle have been reported [38].

After studying the literature available to us, we found that information about the anthropometric parameters of children with ENT diseases is diverse and this requires further research.

Thus, the issue of tactics of managing patients with dentoalveolar anomalies against the background of an adenoid requires the creation of an algorithm for a comprehensive solution to this problem with the participation of not only an otorhinolaryngologist and a morphologist. It is better not to treat any disease, but to prevent it.

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