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НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE

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август

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ANTHROPOMETRIC PARAMETERS OF THE MAXILLOFACIAL REGION OF CHILDREN WITH PHARYNGEAL TONSIL HYPERTROPHY

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✓ ***Resume***

The essence of this study was to determine and compare the parameters of the maxillofacial region of boys and girls with hypertrophy of adenoids in the I and II periods of childhood, to identify the effect of mouth breathing and the degree of hypertrophy on the development of the facial skeleton. In the first and second periods of childhood, all facial parameters have gender differences. In I childhood, there is a primary increase in the size of the head, while in the II period a greater increase in the size of the face was found. while in children with adenoiditis, high growth rates are found at the ages of 5 and 6 years. Due to oral respiration, changes in the morphometric height of the face, height and width of the nose were observed in children with HHM.

Key words: cephalometry, hypertrophy of the pharyngeal tonsil, children, I and II period of childhood, maxillofacial region.

АНТРОПОМЕТРИЧЕСКИЕ ПАРАМЕТРЫ ЧЕЛЮСТНО-ЛИЦЕВОЙ ОБЛАСТИ ДЕТЕЙ С ГИПЕРТРОФИЕЙ ГЛОТОЧНОЙ МИНДАЛИНЫ

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✓ ***Резюме***

Сутью данного исследования было определение и сравнение параметров челюстно-лицевой области у мальчиков и девочек с гипертрофией аденоидов в I и II периодах детства, выявление влияния ротового дыхания и степени гипертрофии на развитие лицевого скелета. В первом и втором периодах детства все параметры лица имеют гендерные различия. В I детском возрасте отмечается преимущественное увеличение размеров головы, тогда как во II периоде обнаружено большее увеличение размеров лица, в то время как у детей с аденоидитом высокие темпы роста обнаруживаются в возрасте 5 и 6 лет. За счет ротового дыхания у детей с ГГМ наблюдались изменения морфометрической высоты лица, высоты и ширины носа.

Ключевые слова: цефалометрия, гипертрофия глоточной миндалины, дети, I и II период детства, челюстно-лицевая область.

HALQUM MURTAKLARI GIPERTROFIYASI BO'LGAN BOLALARNING YUZ - JAG' SOHASINING ANTROPOMETRIK PARAMETRLARI

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✓ ***Rezyume***

Ushbu tadqiqotning mohiyati bolalikning birinchi va ikkinchi davrlarida adenoid gipertrofiyasi bo'lgan o'g'il va qiz bolalarda yuz-jag' sohasining parametrlarini aniqlash va solishtirish, og'iz orqali nafas olish va gipertrofiya darajasini yuzning rivojlanishiga ta'sirini aniqlashdan iborat edi. Bolalikning birinchi va ikkinchi davrlarida yuzning barcha parametrlarida gender farqlari mavjud. Bolalikda bosh hajmining ustun o'sishi kuzatiladi, ikkinchi davrda esa yuzning kattalashishi aniqlangan, adenoiditli bolalarda esa 5 yoshda va yuqori o'sish sur'atlari aniqlanadi. 6 yil. Og'iz orqali nafas olish tufayli HMG bo'lgan bolalarda yuzning morfometrik balandligi, burunning balandligi va kengligidagi o'zgarishlar kuzatildi.

Kalit so'zlar: sefalometriya, halqum murtagi gipertrofiyasi, bolalar, bolalikning I va II davrlari, yuz - jag' sohasi.

Relevance

nowledge of facial dysmorphic traits is important in the diagnosis of many congenital diseases, such as Down syndrome or fetal alcoholic disease (Koca C.F. et al, 2016, Suttie M. et al, 2018,). Some chronic diseases that occur during the development period can lead to abnormalities in facial parameters. A group particularly susceptible to the development of craniofacial abnormalities are children with chronic nasopharyngeal obstruction, who often have mouth breathing. In the long run Mouth breathing can lead to an increase in anterior facial height, retrognathic mandible, steep mandibular angle, lip failure, and narrow maxillary and mandibular dental arches. The combination of these changes is usually called "adenoid face" because it is characteristic of children with hypertrophy of the adenoids and tonsils (Nagaeva T.A. et al., 2016, Tastanova G. et al., 2021, Koval Y.N. et al., 2021).

The mechanistic nature of abnormal facial growth in children is a consequence of adenotonsillar hypertrophy. The classical model suggests that an obscure inflammatory process or infection leads to hypertrophy of the adenoids or tonsils. Enlarged adenoids and tonsils block the upper airway and cause the baby to breathe through the mouth. (Arsenina O. I. et al. 2014) due to weak stimulation of local bones (Pawłowska-Seredyńska K. et al. 2020, Chuang H. H. et al. 2020).

An open mouth often leads to a descending position of the tongue, which can lead to a low position of the lower jaw and head. However, there is evidence that children with adenoids and tonsil hypertrophy have abnormal nocturnal hormone secretion. It has been proven that a decrease in growth hormone secretion may be associated with the posterior size of the face due to the short branch of the lower jaw (Tastanova G.E., Khodzhanov Sh., 2021).

The mechanisms that regulate the growth of a person's head and face are complex processes where there is an interaction between hormones and epigenetic factors. The above factors determine the formation of the bones of the craniofacial region, the violation of which can lead to irreversible changes in this area (Juloski J. et al., 2016).

In violation of the interaction of regulatory factors of bone growth of the facial skeleton, there is an unequal slowdown in bone growth, which leads to anomalies in the formation of the face. With various genetic abnormalities or syndromic pathologies, there is a lag in the development of the dentition (Haynes A, Bulsara MK., 2012). Knowledge of the patterns of growth and development of facial bones will help prevent an increase in the number of disorders in the maxillofacial region (D.A. Domenyuk, 2016).

The number of works devoted to the study of the morphogenesis of the craniofacial complex in childhood with a particular pathology, especially with hypertrophy of the pharyngeal tonsil, is extremely limited. From the literature it is known that the maxillofacial region undergoes cardinal transformations in the process of development. (V.T. Yagupova, 2019). The literature shows that mental stress (Lukina S.F. et al., 2012) affects the physical and functional development of children (Mazen M.Y., 2014).

Materials and methods

To carry out the research, children were involved who were registered with the diagnosis of "Hypertrophy of the adenoids" in polyclinics and applied for the treatment of this disease to the Department of Otorhinolaryngology and Maxillofacial Surgery of the Bukhara Regional Children's Hospital in Bukhara, Republic of Uzbekistan.

421 children with adenoids (218 boys, 203 girls) were studied, the age of the studied children ranged from 3 to 11 years.

For a more accurate characterization and comparative assessment of the morphometric parameters of the face of children, children with hypertrophy of the pharyngeal tonsils were divided according to the degree of hypertrophy of the adenoids, 1 (I degree) and 2 (II degree) 3 (III degree).

Anthropometric studies of children were carried out according to the methodological recommendations of Shomirzaeva N.Kh. et al. [1998], Negasheva M.A. [2017]. A tazometer and a measuring tape were used to measure the anthropometric parameters of the faces of the studied children.

The morphometry of the faces of the examined children was studied according to 10 indicators:

- width between the cheekbones;
- diameter of the lower jaw;
- morphological height of the face;
- physiognomic height of the face;
- externally orbital width;
- between the orbital width;
- nose height;
- width of the nose;
- height of the mucous membrane of the lips
- width of the mouth

Statistical analysis was carried out with the help of well-known statistical techniques and applications. The collected data was corrected, after systematizing the initial materials, the Microsoft Office Excel 2010 spreadsheet program was used to obtain significant results. All data were subjected to statistical analysis using IBM SPSS Statistics v.23 (developed by IBM Corporation, USA).

In order to describe the sample distribution of quantitative features that do not obey the normal distribution, the arithmetic mean (M) and the standard error (m) were used, in the format M±m and the boundaries of the 95% confidence interval (95% CI).

Results and discussions

The study of facial parameters in 3-year-old male children showed that the zygomatic diameter averaged 81.0±0.11 mm, in females it was equal to an average of 7.70±0.10 cm. The mandibular diameter of boys averaged 5.60±0.10 cm, in girls it was equal to an average of 5.50±0.10 cm. in male children, the morphological height of the face averaged 16.0±0.10 cm, in females averaged 16.5±010 cm. The physiognomic height of the face in boys was equal to an average of 10.0±0.10 cm, in girls it averaged 10.99±0.10 cm. In male children, the height of the nose is on average 27.4±0.70 cm, in females it averaged 26.5±0.50 cm. The width of the nose of boys was equal to an average of 24.7±0.40 cm, The external orbital width in male children averaged ±83.7±0.30 cm, in females it was an average of 79.3±0.20 cm, and the interorbital width was on average 24.3±0.30 cm and 20.7±0.40 cm, respectively. In males, the height of the mucous membrane of the lips was equal to an average of 14.2±0.30 cm, in females it averaged 15.7 = 1±0.30 cm, the width of the mouth of boys averaged 34.0±0.50 cm, in girls it was equal to an average of -31.1±0.50 cm

Almost very similar results were obtained in 4-year-old children, in boys the zygomatic diameter averaged 7.80±0.10 cm, and in girls it was equal to an average of 8.30±0.10 cm, and the mandibular diameter in boys is on average - 5.60±0.04 cm, in girls it is on average - 6.10±0.10 cm, respectively. The morphological height of the face in boys is on average - 10.9±0.10 cm, in girls on average - 11.8±0.10 cm. The physiognomic height of the face in boys on average is 16.5±0.10 cm, in girls on average in 16.4±0.10 cm. The height of the nose in boys is on average 28.9±0.70 cm. in girls on average 3.79±0.11 cm, the width of the nose in boys on average is 25.2±0.40 cm, in girls on average - 22.5±0.30 cm. The external orbital width in boys is on average 84.8±0.12 cm, in girls on average - 90.2±0.70 cm the interorbital width in boys on average is 26.1±0.50 cm, in girls on average - 21.9±0.40 cm the height of the mucous membrane of the lips in boys on average is 16.3±0.30 cm, in girls on average - 14.9±0.20 cm, the width of the mouth in boys on average is 27.6±0.05 cm, in girls, the average is 31.4±0.50 cm

In 5-year-old male and female children, there were insignificant but significant increases in size relative to 3- and 4-year-old boys and girls ($P<0.05$). Studies have shown that the zygomatic diameter in male children is on average 8.10±0.10 cm, in female children on average 8.30±0.10 cm, mandibular diameter in male children on average 5.80±0.05 cm, Female children have an average of 6.30±0.10 cm. The morphological height of the face in male children is on average 11.3±0.10 cm , in female children on average - 11.9±0.10 cm. The physiognomic height of the face in male children is on average 16.6±0.10 cm, in female children on average 16.5±0.10 cm. The height of the nose in male children is on average 31.8±0.70 cm, in female children on average 32.1±0.80 cm The width of the nose in male children is on average 27.4±0.40 cm, in female children on average - 23.3±0.30 cm External orbital width in male children on average - 88.7±0.20 cm, in female children on average - 87.9±0.20 cm; the interorbital width in male children is on average 30.3±0.70 cm, in female children on average 23.9±0.11 cm; the height of the mucous membrane of the lips in male children on average is 18.5±0.30 cm, in female children on average - 16.7±0.30 cm; mouth width in male children on average - 37.1±0.60 cm in female children on average - 34.0±0.60 cm

In 6-year-old male and female children, both facial parameters were significantly higher than the same indicators of 3- and 4-year-old children ($P<0.05$) and 1 parameter was significantly higher (except

for the zygomatic diameter) in relation to 5-year-old boys and girls. Theresults were as follows: zygomatic diameter in male children is on average - 8.50±0.10 mm, in female children on average - 8.6±0.1 mm; The mandibular diameter in male children is on average 7.69±0.10 mm, in female children on average - 6.5±0.1. The morphological height of the face in male children is on average - 6.20±0.10 mm, in female children on average - 16.7±0.0 mm. The physiognomic height of the face in male children is on average - 11.0±0.04 mm, in female children on average - 10.5±0.0 mm. The height of the nose in male children is on average 35.5±0.70 mm, in female children on average - 36.8±0.8 mm. The width of the nose in male children on average is 29.7±0.40 mm, in female children on average - 24.2±0.3 mm. External orbital width in male children on average - 89.8±0.30 mm, in female children on average - 91.6±0.2 mm; interorbital width in males on average - 32.2±0.60 mm, in female children on average - 26.7±0.5 mm; the height of the mucous membrane of the lips in male children is on average 19.8±0.30 mm, in female children on average - 17.6±0.2 mm; The width of the mouth in male children is on average 39.9±0.70 mm, in female children on average -38.1±0.5 mm.

The measurements showed that 7-year-old boys and girls had the same trend of change as 6-year-old children. Studies of facial parameters in 7-year-old boys and girls showed that the zygomatic diameter in boys is on average 8.60±0.10 cm, in girls on average 8.70±0.10 cm, the mandibular diameter in boys is on average 6.70±0.10 cm.

in girls on average 6.70±0.04 cm Morphological height of the face in boys on average - 11.8±0.10 cm in girls on average - 12.3±0.10 cm.

The physiognomic height of the face in boys is on average 17.6±0.10 cm, in girls on average - 18.0±0.10 cm. The height of the nose in boys is on average 36.3±0.80 cm, in girls on average 39.0±0.90 cm. The width of the nose in boys on average is 32.1±0.40 cm. in girls on average - 26.8±0.40 cm. External orbital width in boys on average - 94.3±0.40 cm, in girls on average - 95.0±0.30 cm, interorbital width in boys on average - 37.1±0.80 cm, in girls on average - 30.0±0.12 cm, the height of the mucous membrane of the lips in boys on average - 22.2±0.20 cm, Girls have an average of 19.2±0.30 cm, boys have an average mouth width of 42.4±0.60 cm, and girls have an average of 39.0±0.60 cm.

The measurements showed that 8-year-old boys and girls had the same tendency to change as 7-year-old children. Studies of facial parameters in 8-year-old boys showed that the zygomatic diameter of

boys are equal on average - 8.60±0.08 cm, girls are equal on average - 8.8±0.0 cm; The mandibular diameter in boys is on average 7.00±0.03 cm, in girls on average - 7.1±0.0 cm. The morphological height of the face in boys on average is 12.3±0.10 cm, in girls on average - 12.4±0.1 cm. The physiognomic height of the face in boys is on average - 17.6±0.09 cm, in girls on average - 17.8±0.1 cm. The height of the nose in boys is on average 38.7±0.82 cm, in girls on average - 39.0±0.7 cm. The width of the nose in boys is on average 33.9±0.36 cm, in girls on average - 29.3±0.3 cm External orbital width in boys on average - 95.3±0.42 cm, in girls on average - 96.1±0.3 cm; interorbital width in boys on average - 38.9±0.80 cm, in girls on average - 40.3±0.2 cm; the height of the mucous membrane of the lips in boys on average - 22.9±0.20 cm, in girls on average - 21.3±0.5 cm; The width of the mouth in boys on average - 45.5±0.50 cm, in girls on average - 41.1±0.5 cm.The trend of a gradual increase in the size of the face continued in 9-year-old healthy children. Studies of facial parameters in 9-year-old male and female children showed that the zygomatic diameter in male children is on average 8.81±0.08 cm, in female children on average - 8.90±0.04 cm; and the mandibular diameter varied from 7.6 to 10.0 cm, in male children on average - 7.2±0.03 cm, in female children on average - 7.10±0.04 cm. Morphological height of the face in male children on average - 16.8±0.04 cm, in female children on average - 17.1±0.04 cm. Physiognomic height of the face in male children on average - 11.3±0.03 cm, in female children on average - 11.4±0.04 cm. The height of the nose in male children is on average 41.3±0.76 cm, in female children on average 42.2±0.90 cm. The width of the nose in male children is on average 35.5±0.33 cm, in female children on average - 31.8±0.30 cm. External orbital width in male children on average - 99.5±0.13 cm, in female children, the average is 99.3±0.20 cm; interorbital width in male children on average - 39.2±0.80 cm, in female children on average - 41.8±0.20 cm; the height of the mucous membrane of the lips in male children is on average 24.4±0.24 cm, in female children on average - 23.8±0.50 cm; The width of the mouth in male children is on average 52.30±0.04 cm, in female children on average - 44.9±0.40 cm.

The face size of 10-year-old boys and girls was almost at the level of 8- and 9-year-old male and female children, the results of which did not differ significantly ($P>0.05$), significant changes were noted compared to boys and girls 3-7 years old ($P<0.05$). In 10-year-old boys, the zygomatic diameter averaged 8.90±0.04 cm, in girls on average - 9.00±0.03 cm, And the mandibular diameter in boys averaged 7.21±0.03 cm, in girls on average - 7.29±0.04 cm. The morphological height of the face in boys on average is 12.4±0.1 cm, in girls on average - 12.5±0.09 cm. The physiognomic height of the face in boys is on average - 17.9±0.08 cm,

in girls on average - 18.2±0.09 cm. The height of the nose in boys is on average 43.4±0.76 cm, in girls on average -44.2±0.91 cm Width of the nose in boys on average - 36.1±0.38 cm, in girls on average - 35.1±0.26 cm.

The external orbital width in boys is on average 96.8±0.11 cm, in girls on average - 101.4±0.19 cm; interorbital width in boys on average - 40.0±0.08 cm, in girls on average - 44.4±0.24 cm; The height of the mucous membrane

parts of the lips in boys on average - 26.1±0.30 cm, in girls on average - 26.7±0.52 cm; The average mouth width for boys is 51.8±0.36 cm, for girls the average mouth is 46.5±0.51 cm.

Facial parameters in 11-year-old boys and girls showed that the zygomatic diameter in male children averaged 8.91±0.08 cm, in female children on average 9.00±0.04 cm, and the mandibular diameter in male children averaged 7.50±0.07 cm, in female children on average 7.40±0.04 cm. The morphological height of the face in male children is on average 12.5±0.11 cm, in female children on average - 12.8±0.11 cm. The physiognomic height of the face in male children is on average - 18.3±0.08 cm, in female children on average - 18.5±0.08 cm. The height of the nose in male children is on average 44.3±0.78 cm, in female children on average

Table 2

Anthropometric indicators of the face of boys and girls 8-11 years old with hypertrophied pharyngeal tonsils

Age / Floor	8 – flight		9-flight		10 – flight		11 – flight	
	M	D	M	D	M	D	M	D
SD	7,9-8,5 8,1±0,02	6,0-9,0 7,7±0,15	7,0-8,5 7,8±0,1	7,3-9,1 8,3±0,1*	7,2-9,1 8,1±0,1*	7,4-9,4 8,3±0,1*	7,6-9,4 8,5±0,1*	7,5-9,2 8,6±0,1 *
Low-frequency frequency	4,9-6,6 5,6±0,1	4,3-7,4 5,5±0,1	4,9-6,1 5,6±0,0	4,4-7,1 6,1±0,1*	5,4-6,2 5,8±0,0	5,4-7,3 6,3±0,1*	5,5-7,2 6,2±0,1*	5,6-7,5 6,5±0,1
MVL	15,1-17,3 16,0±0,1	15,8-17,3 16,5±0,1	9,8-11,9 10,9±0,1	10,7-12,9 11,8±0,1	9,9-12,6 11,3±0,1	10,8-13,0 11,9±0,1*	14,9-17,9 16,7±0,1	16,2-17,2 16,7±0,0
FVL	9,2-10,7 10,0±0,1	8,7-12,2 10,9±0,1	14,9-18,1 16,5±0,1*	14,8-18,0 16,4±0,1*	15,2-18,0 16,6±0,1	15,2-17,8 16,5±0,1	10,5-11,4 11,0±0,0	9,9-11,0 10,5±0,0
EXT	19,2-35,6 27,4±0,7	20,7-32,3 26,5±0,5	19,8-38,0 28,9±0,7*	20,7-39,7 30,2±0,8*	22,7-40,8 31,8±0,7*	22,4-41,8 32,1±0,8*	26,1-44,8 35,5±0,7*	26,7-46,9 36,8±0,8*
SN	19,7-29,7 24,7±0,4	18,4-25,4 21,9±0,3	19,9-30,4 25,2±0,4*	18,9-26,0 22,5±0,3*	22,3-32,4 27,4±0,4*	19,4-27,2 23,3±0,3*	25,2-34,2 29,7±0,4*	19,9-28,4 24,2±0,3*
NGS	80,3-87,1 83,7±0,3	76,4-82,1 79,3±0,2	82,1-87,4 84,8±0,2*	81,3-99,0 90,2±0,7	86,2-91,2 88,7±0,2*	85,4-90,4 87,9±0,2	86,4-93,2 89,8±0,3*	89,3-93,8 91,6±0,2*
MGSH	16,7-31,9 24,3±0,6	15,2-26,2 20,7±0,4	19,8-32,4 26,1±0,5*	16,3-27,4 21,9±0,4*	21,3-39,2 30,3±0,7*	19,4-28,3 23,9±0,4*	24,2-40,1 32,2±0,6*	20,2-33,1 26,7±0,5*
VG	9,9-18,4 14,2±0,3	11,6-19,7 15,7±0,3	12,4-20,1 16,3±0,3*	11,9-17,8 14,9±0,2	14,6-22,4 18,5±0,3*	12,8-20,5 16,7±0,3*	15,9-23,7 19,8±0,3*	14,6-20,6 17,6±0,2*
ShG	28,0-39,9 34,0±0,5	24,7-37,4 31,1±0,5	27,6-27,6 27,6±0,0	24,8-37,9 31,4±0,5*	29,1-45,0 37,1±0,6*	25,9-42,1 34,0±0,6*	30,7-49,1 39,9±0,7*	31,7-44,4 38,1±0,5*

Note: *-confidence score (P <0.05) compared to the previous age

45.3±0.72 cm. The width of the nose in male children is on average 37.3±0.32 cm, in female children on average - 35.9±0.23 cm.

males on average - 101.3±0.15 cm, in female children on average - 103.1±0.20 cm; interorbital width in male children on average - 41.3±0.71 cm, in female children on average - 45.9±0.25 cm; the height of the mucous membrane of the lips in male children is on average 27.9±0.20 cm, in female children on average - 27.4±0.52 cm; The width of the mouth in male children is on average 53.1±0.34 cm, in female children on average - 51.5±0.58 cm.

Thus, the growth rate of the zygomatic diameter of the face of boys was 1.09 times, and in girls it was 1.17 times, and the growth rate of this parameter in males was 2.35% (9 years) and in females was 7.23% (4 years).

The growth rate of the mandibular diameter of boys increased by 1.33 times, and in girls it was 1.34 times, the increase was observed in boys at 6 years (7.46%), and in girls it was observed at 4 years (9.67%).

Figure 1

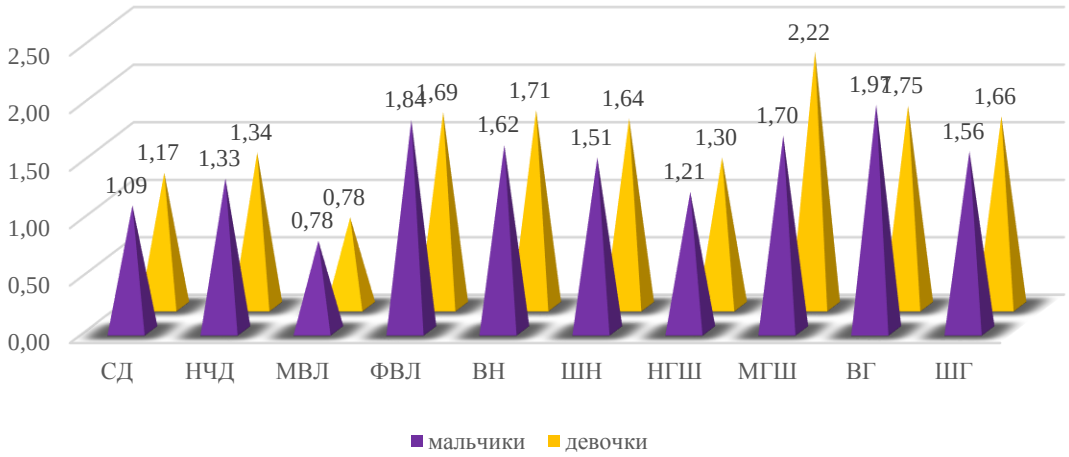

Figure 3.6. Comparative assessment of facial parameters in children with adenoids in the sexual aspect

The growth rate of morphological and physiological height of the face in boys is 0.78 and 1.84 times, and in girls it was 0.78 and 1.69 times, respectively. The highest growth rates for boys were 4.08 per cent at 8 years of age and 2.18 per cent at 11 years of age compared to the previous age, while these rates were 2.72 per cent for girls and 1.36 per cent at 11 years of age compared to children of previous age.

In boys, the parameters of the nose (height and width) increased by 1.62 and 1.51 times, and in girls it was equal to 1.71 and 1.64 times, the rate of increase in the height of the nose in males was observed at 9 years (6.53%) and in females at 6 years (7.47%). The growth rate of nasal width in male children was observed at 4 years (8.04%) and in females at 6 years (9.89%). A comparative assessment of the growth rate of children of both sexes is estimated in Figure 3.6.1.

The growth rate of the external orbital width in male children was 1.21 times, and in females it was 1.30 times. The growth rate of the external orbital width in boys at 7 years old is 4.72% and in girls at 5 years old 3.99%, respectively.

In boys, the interorbital width increased by 1.70 times, in girls by 2.22 times. In male children, the growth rate at 5 years was 5.91% and in female children at 4 years 8.39%, respectively.

The growth rate of the height and width of the lips in males was 1.97 and 1.56 times, and in females it was 1.75 and 1.66 times, respectively. The growth rates in boys were observed at 10 years (6.69%) and 5 years (7.14%), in girls it was observed at 8 years (9.65%) and 11 years (9.71%).

Table 3

Morphometric parameters of the face of healthy boys and children with adenoids

Age, years Face parameters (cm)		3 years		6 years		9 years	
		M	m	M	m	M	m
Physiognomic height of the face	Children with adenoids	16,5	0,16	16,7	0,21	16,8	0,06
R		<0,001		<0,001		<0,001	
Morphologic al height of the face	Children with adenoids	10,9	0,40	10,9	0,05	11,3	0,06
R		<0,001		<0,001		>0,05	

Note: P is the significance of the differences between healthy and adenoids;

T.B. Magomedov (2013) revealed that the longitudinal diameter of the head in 7-year-old boys averages 17.3±0.3 cm, these data differ from ours, the longitudinal diameter of the head of boys is on average 12.3±0.05 cm, tonsils and adenoids have developmental abnormalities, the severity of which depends on the nature of the pathology.

According to D.B. Mirzakarimova (2020), children at school age have the greatest increase in head height (for boys - 1.34 times, for girls - 1.28 times); longitudinal diameter - respectively: 1.1 and 1.07 times; transverse - 1.03 and 1.06 times, as well as head circumference. Consequently, the longitudinal, transverse dimensions and circumference of the head in boys at all ages is greater than in girls, and the height of the face at the age of 7 – 10 years is almost the same. This data corresponds to ours results, and proves the reliability of the data.

Table 4

Morphometric parameters of the face of healthy girls and female children with adenoids

Age, years Face parameters (cm)		3 years		6 years		9 years	
		M	m	M	m	M	m
Physiognomic height of the face	Adenoids	16,01	0,28	16,7	0,07	17,1	0,05
R		<0,001		<0,001		<0,01	
Morphological height of the face	Adenoids	10,11	0,19	10,49	0,08	11,40	0,06
R		<0,001		<0,001		>0,05	

Note: P is the significance of the differences between healthy and adenoids;

In children with hypertrophy of the adenoids, the parameters that form facial features (morphological and physiognomic height of the face, width of the nose, height of the nose, interorbital and external orbital diameter) as a result of nasopharyngeal breathing and decrease of the nasopharyngeal space due to enlarged adenoids change their normal position and lose proportionality, as a result, children with this pathology develop a pathological bite, suspenseful diseases such as nocturnal enuresis and apnea.

According to D.B. Mirzakarimova, at the age of 7, the width of the nose in girls is less than in boys, at 8-9 years old in both sexes it is almost the same, at 10-11 years old girls are superior to boys. The data obtained coincide with the author's data.

Hypertrophy of the pharyngeal tonsils negatively affects physical development in relation to all parameters of children. At the same time, the harmonious development of the head and maxillofacial region is disturbed. All anthropometric parameters deviate to one degree or another in comparison with the indicators of healthy children. The solution to this problem involves improving the quality of preventive examination among the population through introductory conversations with parents, distribution of information brochures and Booklets.

Findings. Indicators of physical growth of children and morphometric parameters of the craniofacial region change in inverse proportion to the degree of hypertrophy of the adenoid and the duration of the disease in this pathology. In the first and second periods of childhood, all parameters of

the head and jaws of the face have gender differences. In I childhood, there is a primary increase in the size of the head, while in the II period a greater increase in the size of the face was found. In children with adenoids, high growth rates are found in ages 5 and 6 years. Due to oral respiration, changes in the morphometric height of the face, height and width of the nose were observed in children with HHM.

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