Reference

1. Mihajlovic M., Vlajkovic S., Jovanovic P., Stefanovic V. Primary mucosal melanomas: a comprehensive review. Int J Clin Exp Pathol. 2012;5(8):739-53. PMID: 23071856; PMCID: PMC3466987.
2. Chang A.E., Karnell L.H., Menck H.R. The National Cancer Data Base report on cutaneous and noncutaneous melanoma: a summary of 84,836 cases from the past decade. The American College of Surgeons Commission on Cancer and the American Cancer Society. Cancer. 1998 Oct 15;83(8):1664-78. doi: 10.1002/(sici)1097-0142(19981015)83:8<1664::aid-cncr23>3.0.co;2-g. PMID: 9781962.
3. Miliaras S., Ziogas I.A., Mylonas K.S., Papadopoulos V.N. Primary malignant melanoma of the ascending colon. BMJ Case Rep. 2018 Mar 9;2018:bcr2017223282. doi: 10.1136/bcr-2017-223282. PMID: 29523612; PMCID: PMC5847959.
4. Amar A., Jougon J., Edouard A., Laban P., Marry J.P., Hillion G. Mélanome malin primitif de l'intestin grêle [Primary malignant melanoma of the small intestine]. Gastroenterol Clin Biol. 1992;16(4):365-7. French. PMID: 1397858.
5. Krausz M.M., Ariel I., Behar A.J. Primary malignant melanoma of the small intestine and the APUD cell concept. J Surg Oncol. 1978;10(4):283-8. doi: 10.1002/jso.2930100402. PMID: 29168.
6. Mishima Y. Melanocytic and nevocytic malignant melanomas. Cellular and subcellular differentiation. Cancer. 1967 May;20(5):632-49. doi: 10.1002/1097-0142(1967)20:5<632::aid-cncr2820200510>3.0.co;2-7. PMID: 6024276.
7. Schuchter L.M., Green R., Fraker D. Primary and metastatic diseases in malignant melanoma of the gastrointestinal tract. Curr Opin Oncol. 2000 Mar;12(2):181-5. doi: 10.1097/00001622-200003000-00014. PMID: 10750731.
8. Manouras A., Genetzakis M., Lagoudianakis E., Markogiannakis H., Papadima A., Kafiri G., Filis K., Kekis P.B., Katergiannakis V. Malignant gastrointestinal melanomas of unknown origin: should it be considered primary? World J Gastroenterol. 2007 Aug 7;13(29):4027-9. doi: 10.3748/wjg.v13.i29.4027. PMID: 17663525; PMCID: PMC4171183.
9. Yi N.H., Lee S.H., Lee S.H., Kim J.H., Jee S.R., Seol S.Y. Primary malignant melanoma without melanosis of the colon. Intest Res. 2019 Oct;17(4):561-564. doi: 10.5217/ir.2019.00020. Epub 2019 Aug 5. PMID: 31302994; PMCID: PMC6821945.
10. Raja J., Hegde R., Srodon M., Katoch A., Kurtzman S., Zhang Z. A Case of Primary Melanoma of the Transverse Colon. Cureus. 2017 Oct 26;9(10):e1803. doi: 10.7759/cureus.1803. PMID: 29308331; PMCID: PMC5749940.

D.K. Garmaeva, I.O. Popov, D.V. Shivkin

DETERMINATION OF NASAL SEPTUM DEVELOPMENT PATTERNS IN INDIGENOUS CHILDREN AGED 0 TO 4 IN THE REPUBLIC SAKHA (YAKUTIA)

DOI 10.25789/YMJ.2022.79.09

УДК617.723.2:616.31.002

Dynamics in the development of otorhinolaryngological pathologies among Sakha Republic's population has a positive upward trend, and one of the main reasons is the deformity of the nasal septum, which, according to some authors, makes up 56 to 95% of all treatment cases. Congenital deformities or developmental anomalies leading to deviation of the nasal septum in children with untimely diagnosis can lead to chronic inflammatory processes in the mucous membrane of the cavity and paranasal sinuses. This causes a violation of the airway function of the upper respiratory tract and increased probability of infectious diseases. Diagnosis of these conditions in children under 6 years of age will prevent these consequences, as well as reduce the need for surgical treatment of septoplasty. This article discusses a method for describing the developmental patterns of the nasal septum as one of the practical methods for early diagnosis of children. The method uses computed tomography data of children of the indigenous population of the Sakha (Yakutia) Republic. We have analyzed the results of studies of multislice CT of the head in multiplanar mode for children aged 0 to 4 with a total of 48 patients. At the same time, the grouping of research subjects was based on gender (boys, girls) and age (by years). While analyzing the images, we used the linear dimensions of the nasal septum, including the length and height of the septum, as well as its angle of deviation. According to the results of the analysis, we found statistically significant correlations, which made it possible to conclude that there is a linear relationship between age groups and each of the indicators, as well as a decrease in the deviation angle of the nasal septum with age.

Keywords: developmental patterns; nasal septum; CT scan; anatomy; indigenous people; deviated nasal septum.

Introduction. The nasal septum is located on the facial region of the head in the middle part of the nasal cavity. It separates the two nasal passages and forms a scaffold to support the external nose. This structure has a mosaic developmental pattern and consists of bony structures, such as the perpendicular plate of the ethmoid bone above, the vomer below, and the tetrahedral cartilage in front. It develops from three main embryological sources: ectoderm, neural crest and mesoderm, which, by the end of the fourth week of gestation, form paired thickenings of the ectoderm in the embryo, forming the nasal cavity and its structures. [1, 2, 3, 4, 9, 11].

Deviations in the development of the nasal septum in the embryonic and postembryonic periods entail an increased risk of otorhinolaryngological pathologies and cause a violation of the nasal airway function [2, 7, 8, 9, 11, 13]. Conditions arise where the biomechanical aspects of air going through the nasal passages worsen. This leads to — in children in particular — chronic hypoxic conditions, an increase in the development of infectious diseases of the upper respiratory tract, impaired olfactory function, and speech problems. These also include the common pathology of deviation, or curvature, of the nasal septum. With untimely diagnosis of this disorder, there may be violation in the circulation of the nasal discharge from the paranasal sinuses, which leads to a favorable environment for infectious agents and the development of sinuses inflammation (e.g., sinusitis, ethmoiditis, frontal sinusitis). Inflammation of the nasal mucosa can also cause chronic rhinitis, the development of polyps, and sleep apnea [4, 11].

GARMAEVA Darima Kyshektovna – MD, Professor of the Department of Normal and Pathological Anatomy, Operative Surgery with Topographic Anatomy and Forensic Medicine at NEFU's Medical Institute, e-mail: dari66@mail.ru; **POPOV Ivan Olegovich** – postgraduate student of the Department of Normal and Pathological Anatomy, with the Course of Operative Surgery, Topographic Anatomy and Forensic Medicine at NEFU's Medical Institute, e-mail: pv25008@gmail.com; **SHIVKIN Denis Valerievich** – third-year student of the Faculty of General Medicine at NEFU's Medical Institute, e-mail: irtvwbzo@gmail.com

To solve the problems described above, otorhinolaryngologists resort to surgical treatment of septoplasty [1, 2, 4, 5]. The surgery aims to correct parts of the nasal septum under conditions as part of endoscopic intervention and to restore adequate air flow through the nasal passages in the postoperative period. In the preoperative period, the doctor needs to study in detail the structure and form of the nasal passages and the septa, assess the degree of deviation and determine the appropriate surgical strategy. To do this, surgeons use the results of computed tomography, which allows visualizing problematic areas of the nasal septum in detail, as well as examining the anatomical zone in three planes (axial, frontal and sagittal) and using three-dimensional reconstruction of the nasal structures [10, 14].

As mentioned above, computed tomography is one of the main methods for diagnosing deviated nasal septum. Meanwhile, patients seek medical help for symptoms that are the result of a chronic inflammatory process occurring in the nasal cavity. While being examined by an otolaryngologist, patients learn for the first time that they have a deviated nasal septum. These data may indicate insufficient measures related to preventing nasal cavity pathologies among the population and raises the issue of increasing the effectiveness of the measures to prevent them.

It is also worth noting that deviated nasal septum often occurs even in the embryonic period of the child's development, which may indicate congenital deviations or prerequisites for their occurrence. Considering that the growth and development of human bone and cartilage structures occurs rapidly in the early period, we infer that the risk group for deviated nasal septum includes children, newborn to preschool age [6, 15].

In connection with the problems described above, this article aims to study the developmental patterns of nasal septum structures in the indigenous inhabitants of the Far North living in the Sakha Republic aged 0 to 4, to identify these patterns and to also identify the minimum necessary criteria for predicting and determining nasal septum deviation in children.

Materials and Methods. The study was conducted on the basis of the Department of Radiation Diagnostics at the M.K. Ammosov Republican Hospital. We have studied skull from tomograms obtained using multispiral computed tomography with GE Optima CT660. In the course of a retrospective cohort study, we selected intravital tomograms of the facial skull of indigenous children aged 0 to 4 in various gender samples. A total of 48 children were studied, of which 16 were girls (30.7%) and 32 were boys (69.3%). The distribution by age was carried out with a breakdown by one year (Table 1). Within the group of boys, there were 13 children less than one year of age (40.6% or 27.1% of the total), aged one to two years old — 7 children (21.9% or 14.6% of the total), aged two to three — 3 children (9.4% or 6.3% of the total), from three to four — 9 children (28.1% or 18.8% of the total). Among girls, the distribution went as follows: less than one year of age — 3 children (18.75% or 6.3% of the total), aged one to two — 3 children (18.75% or 6.3% of the total), aged two to three — 4 children (25% or 8.3% of the total) and aged three to four — 6 people (37.5% or 12.5% of the total).

The study included 48 results of multispiral CT scans of the brain and paranasal sinuses in standard mode and standard positions in patients undergoing routine examination or suspected head injury. The selection criteria included patients where, according to the results of computed tomography of the brain, there were no traumatic changes in the bones of the skull and nasal septum detected. The exclusion criteria had children with an anomaly in the development of the maxillofacial region, traumatic fractures of the bones of the nose and septum, as well as after surgery to correct deviated nasal septum. Image processing was carried out in DICOM (Digital Imaging and Communications in Medicine) based on the ArchiMed Radiological Information System (commercial license) using linear measurements in multiplanar two-dimensional mode. All results were anonymized with the preservation of relevant information, such as age and gender.

The measurement of the linear dimensions of the nasal septum was carried out according to the following craniometric reference points [10, 12]: total length of the nasal septum between the piriform opening and the vomer edge (length of septum or LS); maximum length of the septum between the most anterior part of the nasal septum and the edge of the vomer (maximal length of septum or MLS); height of the nasal septum at the level of the intersection of its bone and cartilaginous parts or at the level of the middle third of the total length between the hard palate and the maximum upper point of the perpendicular plate of the ethmoid bone (septum height or SH); angle of deviation of the nasal septum relative to the vertical line at the level in the middle third of the total length (septum deviation angle or SDA).

Further statistical processing was carried out using Microsoft Office Excel (shareware license), as well as using the Python programming language with NumPy and pandas libraries for static analysis. We assessed the correspondence of the empirical distribution of the studied variables to the normal distribution law using the Shapiro–Wilk test. During the analysis, it turned out that the results of the MLS parameter do not correspond to the normal distribution, and we therefore decided to use the nonparametric Kruskal–Wallis test. We also assessed the homogeneity of the variance using Levene's test. We used nonparametric analysis of variance (ANOVA) to assess the differences between the studied age groups. To conclude on the presence or absence of statistical significance, we used the criterion of $P \le 0.05$.

Results and Discussions. When measuring the craniometric parameters of the subjects' nasal septum, we revealed a statistically significant relationship between the age groups (Table 1).

Considering the results without gender differentiation in the total sample, we noticed a significant correlation between the age of the child and the following parameters: length of the nasal septum (0.69; $p < 0.05$), maximum length of the nasal septum (0.78; $p < 0.05$) and its height (0.83; $p < 0.05$). This may be because during this period of a child's life that the structures that form parts of the facial skull and nasal cavity are actively developing, tending to threshold values of these areas' parametric indicator ratios. With the child's active growth in the first years of life, the biomechanical aspects of the nasal cavity's structure, which form with the help of its septum, ensure adequate air passage through the upper respiratory tract.

We have also noticed a slight difference in linear measurements of LS, MLS and SH between boys and girls of the total sample in different age groups,

Table 1

Pearson Linear Correlation Values (rx. y) for Nasal Septum Depending on Patient's Age at P<0.05 (N=48)

Parameter	$r_{x.y}$
LS	0.691319
MLS	0.779506
SH	0.828580
SDA	-0.186490

Table 2

Results of Nasal Septum Measurements

		LS (mm)		MLS (mm)		SH (mm)		SDA (degrees)	
Age, years	Gender	m±SD	95% CI	m±SD	95% CI	m±SD	95% CI	m±SD	95% CI
0-1	Combined	35.0±4.04	31.17-35.48	42.25±2.87	40.53-43.59	22.35±1.67	21.01-22.79	10.80±2.68	8.73-11.59
	Boys	33.70±4.38	30.22-35.51	42.80±3.19	40.15-44.01	22.30±1.77	20.62-22.76	11.80±2.77	8.81-12.16
	Girls	35.00±0.58	33.9-36.77	41.70±0.83	39.89-44.04	23.10±0.70	21.06-24.54	7.90±2.08	3.57-13.89
1-2	Combined	40.6±6.44	33.73-42.95	46.60±5.63	43.69-51.75	26.3±2.74	23.93-27.85	7.45±3.57	5.56-10.68
	Boys	41.60±5.92	35.16-46.1	51.10±5.31	44.86-54.68	26.10±2.10	23.53-27.42	7.10±4.21	4.22-12.00
	Girls	31.50±4.54	21.72-44.28	41.80±2.97	35.56-50.30	26.60±4.31	16.17-37.56	8.80±2.08	2.96-13.30
2-3	Combined	42.1±3.03	39.21-44.82	54.10±2.57	51.15-55.9	27.3±3.29	25.13-31.21	5.90±0.94	5.59-7.34
	Boys	44.70±4.48	32.1-54.37	56.10±3.73	44.84-63.36	27.30±3.87	19.18-38.42	5.90±0.74	4.34-7.99
	Girls	41.10±1.54	38.65-43.56	53.80±1.84	50.17-56.03	27.75±3.31	22.44-32.96	6.50±1.12	4.92-8.48
3-4	Combined	44.1±2.55	42.32-45.15	55.20±3.54	52.44-56.35	31.1±3.64	29.42-33.44	6.80±3.03	6.38-9.73
	Boys	44.10±3.11	41.21-45.99	55.50±4.09	51.03-57.31	32.65±3.28	30.65-35.7	6.70±2.16	5.59-8.92
	Girls	43.80±1.66	42.19-45.68	54.65±2.84	51.76-57.72	28.35±2.48	26.22-31.42	9.30±3.91	5.15-13.35

Note: m is median line; SD is standard deviation; CI is confidence interval.

which is confirmed by the data in Table 2. When considering the results of the study of the length of the nasal septum (LS) among boys, we can note that the most pronounced values are at the ages of 3-4 (44.7 ± 4.48 mm at $p < 0.05$ and 44.1±3.11 mm at $p < 0.05$, respectively). In the group of girls, a similar situation is observed, while the length of the nasal septum (LS) tends to lengthen from the ages of 2 (31.5±4.54 mm, $p < 0.05$) to 3 (41.1 ± 1.54 mm, $p<0.05$), respectively.

Analysis of the maximum length of the nasal septum (MLS) and its height (SH) showed an identical picture by 3-4 years of age, due to an increase in the size of not so much the bone component of the septum as its cartilaginous part. At the same time, if the difference between the craniometric lengths of LS and MLS in the first year is about 6-7 mm, then between the second and third years it reaches about 11-12 mm. This may be caused by the active development of the tetrahedral cartilage of the nasal septum, which forms the framework of the anterior nasal cavity, as well as maintaining the components of the external nose, and providing more effective inhaling and air going through the nasal passages.

According to W. Likus et al. [10], length dimensions of the bone and cartilage parts of the nose develop similarly. At the same time, we have recorded the size growth in indicators between age groups between the second and third years of life. When comparing our results of the study of nasal septum's linear parameters in indigenous children aged 0 to 4 with the results of W. Likus et al., who have studied Caucasian children of the same age group, we can trace longer linear dimensions of nasal septum in the second year of life in Sakha children (40.6 ± 6.44 mm) over those in Caucasian children (31.90 ± 3.24 mm).

Conclusions. The correlation between the children's age and the craniometric data of the nasal septum has a statically significant linear relationship, where there is a positive trend in nasal septum size, especially by ages 3-4. Simultaneously with the growth of these dimensions, we can observe the decrease in nasal septum deviation angle, as evidenced by the negative Pearson correlation values. This trend indicates an adequate and comprehensive development of the nasal cavity, facial skull and nasal septum in children. Also noteworthy is the rapid growth of the cartilaginous part of the nasal septum by age 3, which is confirmed by the difference between indicators, such as LS and MLS. This data demonstrates how this method of studying the nasal septum based on CT results can be applied when detecting deviations in the septum's development and using it to prevent naval cavity diseases.

Reference

1. Oganesyan SS, Yanov YuK, Naumenko NN, Iliin SN, Mishkorez MV. Morfometricheskie varianty stroeniya naruzhnogo nosa i vnutrinosovyh struktur pri rinoskalioze: komp'yuterno-tomograficheskoe issledovanie [In Russian]. лMorphometric Variants of the Structure of the External Nose and Intranasal Structures in Rhinoscaliasis: Computer Topographic Study. RO. 2009. No. 6 (In Russ.).]

2. Markeeva MV, et al. Osobennosti izmenchivosti kostnoj chasti peregorodki nosa v detskom vozraste [Features of the Variability of the Bone Part of the Nasal Septum in Childhood]. Izvestiya vuzov. Povolzhsky region. Medicinskie nauki [News of Universities. Volga Region. Medical Sciences. 2020; 2 (54) (In Russ.).]

3. Lutsay ED, et al. Sovremennye predstavleniya o razvitii i stroenii nosovoj polosti cheloveka [Modern Ideas About the Development and Structure of the Human Nasal Cavity]. Medicinskij vestnik Bashkortostan [Medical Bulletin of Bashkortostan. 2021. No. 1 (91) (In Russ.).]

4. Subbotina M.V., Kokhanov V.S. Vliyanie narusheniya arhitektoniki polosti nosa i nosoglotki na razvitie okolonosovyh pazuh i formirovanie v nih vospalitel'nyh processov [Influence of Violations of the Architectonics of the Nasal Cavity and Nasopharynx on the Development of the Paranasal Sinuses and the Formation of Inflammatory Processes]. RO. 2020; No. 5 (108) (In Russ.).]

5. Chistyakova V.R. Klinicheskoe znachenie anatomii i fiziologii LOR-organov u novorozhdennykh i grudnykh detey: natsional'noe rukovodstvo [Clinical Significance of the Anatomy and Physiology of the Ent Organs in Newborns and Infants: National Guidelines]. Ed. by M.R. Bogomilsky, V.R. Chistyakova. Moscow: GEOTAR-Media, 2008: 736 (In Russ.).]

6. Lee S.H., Yang T.Y., Han G.S., Kim Y.H., Jang T.Y. Analysis of the Nasal Bone and Nasal Pyramid by Three-Dimensional Computed Tomography. Eur. Arch. Otorhinolaryngol. 2008: 265.

7. Ruano-Gil D, et al. Deformities of the Nasal Septum in Human Fetuses. Rhinology. 1980 Vol. 18, No. 2.

8. Devareddy M.M., Devakar S. Evaluation of Anatomical Variations in Nose and Paranasal Sinuses by Using Multidetector Computed Tomography. International Journal of Contemporary Medicine, Surgery and Radiology. 2019 Vol. 4, No. 3.

9. Cellina M. et al. Nasal Cavities and the Nasal Septum: Anatomical Variants and Assessment of Features with Computed Tomography. Neuroradiology Journal. 2020 Vol. 33, No. 4.

10. Likus W. et al. Nasal Region Dimensions in Children: A CT Study and Clinical Implications.

Experimental and Therapeutics Medicine. 2017; 14 (2): 1519-1525.
11. Janovic N. et al. Relationship Between Nasal Septum Morphology and Nasal Obstruction Symptom Severity: Computed Tomography Study. Brazilian Journal of Otorhinolaryngology. 2020.
12. Serifoglu I. et al. Relationship Between the Degree and Direction of Nasal Septum Deviation and Nasal Bone Morphology. Head and Face Medicine. 2017 Vol. 13.
13. Radulesco T. et al. Geometric Morphometric Contribution to Septal Deviation Analysis. Surgical and Radiological Anatomy. 2019; 41 (7).
14. Som P.M., Naidich T.P. Illustrated Review of the Embryology and Development of the Facial Region, Part 2: Late Development of the Fetal Face and Changes in the Face from the Newborn to Adulthood. American Journal of Neuroradiology. 2014; 35(1): 10-18
15. Wozniak J., Kedzia A., Dudek K. Mathematical Assessment of Fetal Facial Skeleton Development. Archives of Perinatal Medicine. 2010;16 (4): 211-217.

HEALTHY LIFESTYLE. PREVENTION

K.G. Basharin, Yu.I. Zhegusov, E.K. Kolesnikova

THE ROLE OF PREVENTIVE MEASURES IN REDUCING THE CONSUMPTION OF TOBACCO AND ALCOHOL AMONG YOUTH STUDENTS IN THE REPUBLIC OF SAKHA (YAKUTIA)

DOI 10.25789/YMJ.2022.79.10

УДК 616.31-08-039.71

The article presents the results of a sociological study of the impact of preventive activity in the form of information and educational lectures on the attitude of students to the consumption of tobacco, alcohol and other drugs. Monitoring studies conducted from 2010 to 2017 demonstrate significant reduction in smoking and alcohol consumption among students of both sexes.

Keywords: prevention of substance use, Shichko's method, tobacco, alcohol, students, sober healthy lifestyle.

Purpose of the study is examination the effectiveness of preventive measures carried out in the form of lectures among young students in the Republic of Sakha (Yakutia).

Materials and research methods. The study used data from sociological surveys, in which representatives of young people took part (high school students of general education schools and students of vocational and higher educational institutions). The sociological study "The effectiveness of lectures on the dangers of tobacco and alcohol consumption" (n=648) consisted of two waves, stages. The first questionnaire survey recorded the situation with the consumption of alcohol, tobacco and other psychoactive substances in the social environment of students. The second survey was conducted after the course of lectures and revealed the assessment of the lectures by the target audience, and also determined what attitudes were established in relation to the consumption of tobacco and alcohol. The study "Monitoring the consumption of psychoactive substances among young students" (n=1213) recorded the dynamics of the use of psychoactive substances from 2010 to 2017.

Results and discussion. According to the results of surveys conducted after the course of lectures on the Shichko method among the first-year students of NEFU in 2015, the majority of students highly appreciated the work of lecturers, the average rating in almost all educational units corresponds to 4 ("good") on a 5-point scale. According to the results of the study, it was revealed that the proportion of students who decided to give up alcohol after the courses turned out to be 19.9% more than those who had not previously consumed alcohol.

Table 1

Оценки качества прослушанных лекций студентами СВФУ им. М.К. Аммосова (n=648)

Факультет/институт	ФЛФ	ИЗФИР	ИЕН	ИП	АДФ	ФЭИ	МИ
Средний балл оценки курса лекций	**4,2**	**4,2**	**4,6**	**4,2**	**4,3**	**4,3**	**4,4**
Слушатели, принявшие решение отказаться от потребления алкоголя, %	**67,1**	**69,7**	**81,3**	**75,0**	**61,5**	**76,5**	**63,9**

Table 2

Эффективность курса лекций по методу Шичко среди студентов-первокурсников СВФУ им. М.К. Аммосова (n=648)

Данные опроса до проведения курсов		Данные опроса после проведения курсов	
Доля потребителей алкоголя, %	Доля не потребляющих алкоголь, %	Доля студентов, принявших решение отказаться от алкоголя, %	Эффективность курса, %
49,3	50,7	**70,6**	**+19,9**

BASHARIN Karl Georgievich – Doctor of Medical Sciences, Professor of the Department of Normal and Pathological Anatomy of the Medical Institute of M.K. Ammosov NEFU, email: kbasharin42@mail.ru; **ZHEGUSOV Yury Innokentievich** – Candidate of Social Sciences, Senior Researcher of the Institute of Biological Problems of Permafrost SB RAS, email: sociolog_ykt@mail.ru); **KOLESNIKOVA Elena Karlovna** – Chairman of the Board of the Yakut branch All-Russian Public Organization for Support of Presidential Initiatives in the Field of Health Saving "Common Cause", email: elena_premudraya3000@mail.ru