changes of bone tissue of the mandible of rats with trauma of the mandible at the site of defect in obstructive hepatitis, received by ligation and intersection of the total bile duct; experimental number 2 - 20 rats - study of histological changes of the mandibular bone tissue of rats with trauma of the mandible at the site of the defect in toxic hepatitis, obtained by introducing per os four carbon monoxide. All rats injured the lower jaw through perforation and defect formation. In the future, the histological signs of healing of the area of the perforation defect were observed. In the experimental pathology of the hepatobiliary system regeneration of the defect site of the mandible worsens, which is manifested by a decrease in the rate of recovery of the specific volume (%) of fibrotic reticular tissue in 2.6 times in obstructive hepatitis and toxic hepatitis - 3.4 times. In the experimental liver disease, osteo regeneration of the defect of the mandible is slowed down. In patients with trauma of the mandible, when detecting the pathology of the hepatobiliary system, it is advisable to perform correction of metabolic processes.

Key words: *rat, maxillofacial area, perforation defect of mandible, regeneration, morphometric analysis.*

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Стаття надійшла до редакції 19.05.2017 р.

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FEATURES RELATIONS COMPUTED TOMOGRAPHY SIZES OF PREMOLAR TEETH WITH CEPHALOMETRIC INDICATORS OF PRACTICALLY HEALTHY MEN FROM NORTHERN AND SOUTHERN REGIONS OF UKRAINE

Summary. *In practically healthy men of northern and southern regions of Ukraine, features of connections of linear sizes of small angular teeth and their roots with cephalometric indices of the brain and facial skull are established. With the indicators of the skull in the northern region, predominantly direct, reliable and unreliable medium power connections (14.1% on the upper jaw, of which the relative majority are mesio-distal and vestibule-lingual and 21.9% on the lower jaw, of which a relative majority with the height of the teeth and their crowns and the length of the roots), and in the southern region - mostly inverse reliable and unreliable medium strength connections (8.6% on the upper jaw and 12.9% on the lower jaw, in both cases relative majority with the teeth height and their crowns and with the length of the roots). With the indexes of the facial skull in the northern region, predominantly direct, reliable and unreliable medium power connections (12.0% on the upper jaw, of which the relative majority with the height of teeth and their crowns and root length and 10.7% on the mandible, with the relative majority with mesio-distal and vestibule-lingual), and in the southern region - mostly inverse reliable and unreliable medium power connections (11.2% on the upper jaw and 8.8% on the lower jaw, in both cases relative majority with the teeth height and their crowns and with the length of the roots).*

Key words: *correlations, premolar teeth, computer tomography, cephalometry, practically healthy men, regional features.*

Introduction

Individualization of the approach to patients in dentistry, taking into account the features of his face, age and ethnicity, is the right key to ensure the proper quality of dental care delivery to the population and improve the performance of orthodontists, therapeutic dentists and maxillofacial surgeons [13, 16-18]. At the same time, most researches in Ukraine and abroad are devoted not to administrative-regional features of the structure and size of teeth and heads, but to climatic, historical or ecological features. Establishing regional peculiarities of these indicators will allow dentists with a greater probability to begin practical implementation of the results obtained [2, 4, 8, 11].

According to the results of a number of papers [6, 7, 14, 15] it is known that there are links between the dimensions of angular teeth, dental arches and cephalometric indices and the skull in general, which is explained by their phylogeny, ontogenetic and morpho-functional unity.

The *purpose* of the work is to determine the features of correlations of the computer-tomographic size of small angular teeth and their roots with cephalometric indices of practically healthy men of northern and southern regions of Ukraine.

Materials and methods

On the basis of the medical center "Vinintermed LTD", 65 healthy and healthy men aged from 19 to 35 years from the northern region (n=32, residents from Zhytomyr, Kyiv, Chernihiv and Sumy regions) and the southern region (n=33, residents from Odessa, Mykolaiv, Kherson, Zaporizhzhya regions and Crimea), a cone-ray computer tomography was performed using the Veraviewepocs-3D dental cavity beam (Morita, Japan). The volume of a three-dimensional image

is a cylinder of 8x8 cm, a layer thickness of 0,2/0,125 mm, an irradiation dose of 0,011-0,048 mSv, a voltage and a current of 60-90kV/2-10mA. The study of a three-dimensional model of bone structures of the tooth-jaw complex was carried out in the i-Dixel One Volume Viewer (Ver.1.5.0, J Morita Mfg. Cor.) [3, 10].

Bioethics Committee of National Pirogov Memorial Medical University, Vinnytsya (protocol № 8, 10.09.2013) found that the studies fully met ethical and moral requirements in accordance with the order of the Ministry of Health of Ukraine № 281 of 01.11.2000 and do not contradict the basic bioethical norms of the Helsinki Declaration, the Convention of the Council of Europe on Human Rights and biomedicine (1977).

On cone-ray computer tomograms small angular teeth of the upper and lower jaws were measured: the length of the tooth; the length of palatal and cheek's roots of small angular teeth of the upper and lower jaw; height of tooth crown; vestibular-lingual dimensions of the crown and neck of the tooth; mesio-distal dimensions of the crown and neck of the tooth [12].

The cephalometric study consisted of determining the parameters of the cerebral and facial sections of the head with the help of a large sliding compass with a scale in the real size of the Martin system and soft centimeter ribbon. Cephalometric studies were conducted taking into account the generally accepted recommendations and anatomical points [1, 5].

The form of the head was determined by the following formula [9]: the largest head width / the largest length of the head x100. Up to a value of 75.9 men attributed to dolichocephals; 76,0-80,9 - to mesocephals; 81.0-85.4 - for brachycephals; 85.5 and more - to hyperbrachycephals. The following distribution is established: men dolichocephals - northern 2, southern 2; men mesocephals - northern 11, southern 10; brachycephals male - northern 12, southern 15; men hyperbrachycephals - northern 7, southern 6.

The value of the index sign (Garson morphological index) was obtained according to the corresponding formula [12]: the morphological face length / the largest face width x100. In the meaning of the index to 78.9 men attributed groups with a very wide face; 79,0-83,9 - wide face; 84.0-87.9 - middle face; 88,0-92,9 - narrow face; 93.0 and more - very narrow face. The following distribution is established: men with a very wide face - northern 1, southern 1; men with wide faces - northern 2, southern 2; men with middle face - northern 3, southern 8; men with a narrow face - northern 8, southern 12; men with a very narrow face - northern 18, southern 10.

The statistical processing of the obtained results was carried out using the statistical software package "Statistica 6.1" using the nonparametric Spirman method.

Results. Discussion

In the analysis of reliable and average strength of inaccurate correlations of computer-tomographic linear sizes of SCT with cephalometric indices, craniotype and the type of the face of practically healthy men of northern and southern regions of Ukraine, the following *multiple relationships* are established:

in the *northern region* - direct reliable (r = 0,35-0,54) and unreliable mean strength (r = 0,30-0,34) connection of the largest girth of the head, the largest head width and the smallest head width with the majority of mesio-distal dimensions of the SCT (with the exception of the first upper) and the height of the crowns of the lower SCT (with the exception of the smallest head width); direct (r = 0.35-0.51) and unreliable mean strength (r = 0,30-0,34) ties of the mandible width and length of the body of the lower jaw on the left with most of the vestibular-lingual dimensions of the SCT (with the exception of other upper ones), as well as similar connections of the exterior width with the height of the other lower SCT, their crowns and mesio-distal dimensions; straight, mostly unreliable mean forces (r = 0,30-0,32) of the face width with crown height, mesio-distal and vestibular-lingual dimensions of the lower left first SCT; inverse (r = -0.36 - -0.48) and unreliable mean strength (r=-0.30 - -0.33) of the Garson morphological index and face type with height and length of the roots of the upper right first SCT, as well as with the mesio-distal size of the neck of the lower first SCT;

in the *southern region* there are reverse, mostly reliable (r=-0.36 - -0.52) and unreliable mean force (r=-0.30 - -0.33), connections of the largest girth, sagital arc and the greatest length of the head with the height of the crowns of the lower SCT (with the exception of the second left) and only the largest girth and sagittal arc of the head with mesio-distal cervical size of the upper second SCT; inverse, mostly reliable, average strength (r=-0,35 - -0,44) connections of the largest head width with the height of other upper and lower SCT and their roots (with the exception of the cheek root of the upper teeth); inverse reliable mean strength (r = -0.36 - -0.39) connections of the cranial index and head type with the length of the root of the lower first SCT; direct reliable (r=0.36 and 0.37) and unreliable mean strength (r=0.33 and 0.34) connections of the cranial index and head type with crown height of second lower SCT; inverse reliable mean strength (r=-0,35 - -0,43) connections of the mandible width with mesio-distal dimensions of the upper second SCT; direct reliable (r=0,35-0,39) and unreliable average strength (r=0,31-0,34) ties of length and height of the nose with the height and length of the roots of the lower first SCT; direct, reliable mean power (r=0.35 and 0.38) connections of nasal depth with root length and inverse reliable mean power (r=-0.42 and -0.46) connections of nasal depth with lower coronal height second SCT; inverse, mostly reliable, average strength (r=-0,35 - -0,52) of the distance between the nasion and the inter-cutter point with mesio-distal (neck only) and vestibular-lingual dimensions of the upper first SCT; inverse, mostly reliable (r=-0.36 - -0.50) and unreliable mean strength (r=-0.30 -0.34) connections of the intercostal-width, external-width and oral width with crown height and mesio-distal size of the neck of the lower first SCT (with the

exception of intraocular and outer-width for the left tooth); inverse significant (r=-0.39 and -0.42) and unreliable mean strength (r=-0.32 and -0.33) connections of the length of the body of the mandible on the right and left with mesio-distal dimensions of the upper left first SCT.

Quantitative analysis of the reliable and average strength of inaccurate correlations of computer-tomographic linear dimensions of SCT with cephalometric indices, craniotype and face type of practically healthy men in the *northern region* of Ukraine revealed the following distribution of relationships:

between the upper SCT and the brain skull indicators, 36 out of 256 possible (14.1%) connections, of which 4.3% direct mean strength and 9.8% of direct mean uncertainties connections; among which - with the first teeth, 14 connections of 128 possible (3.9% of direct, reliable average forces and 7.0% of direct, false median force); with other teeth, 22 connections from 128 possible (4.7% of direct, reliable mean strength and 12.5% of direct false averages); with the height of teeth and their crowns and the length of the roots of 15 connections of 128 possible (0.8% direct mean force and 10.9% direct mean uncertainty); with mesio-distal and vestibular-lingual dimensions 21 out of 128 possible (7.8% of direct, reliable average forces and 8.6% of direct mean uncertain forces);

between the lower SCT and the cerebral skull indicators, 49 connections out of 224 possible (21.9%) out of which 12.9% of the direct mean strength and 8.9% of the direct mean uncertain forces, among which - with the first teeth 24 out of the 112 possible (10.7% of direct and average strength and 10.7% of direct mean uncertainty); with other teeth, 25 out of 112 possible connections (15.2% of direct mean strength and 7.1% of direct false median power); with a height of teeth and their crowns and a root length of 24 out of 96 possible (14.6% of direct mean strength and 10.4% of direct mean uncertainty); with mesio-distal and vestibular-lingual dimensions of 25 connections from 128 possible (11.7% of direct mean strength and 7.8% of direct mean uncertainty);

between the upper SCT and the facial skull indicators 73 of the 608 possible (12.0%) of which, 0.5% of the direct reliable strengths, 3.0% of direct mean strengths, 5.4% of direct mean uncertainties, 1.0% of the returns of the true mean strength and 2.0% of the inverse unreliable mean strength, among which - with the first teeth 32 connections from 304 possible (4.3% direct, average, 3.3% of direct, unreliable average strength, 1.3% of the reciprocal of credible average strength and 1.6% of the reciprocal of unreliable mean power); with other teeth, 40 connections of 304 possible (1.0% direct strong, 1.6% direct mean force, 7.6% direct mean uncertainty, 0.7% reverse reliable average strength and 2.3% inverse false middle forces); with the height of the teeth and their crowns and the length of the roots 40 connections from 304 possible (1.0% direct strong, 1.6% direct mean force, 5.9% direct mean uncertainty, 1.0% reverse true mean force and 3.6% of inverse unreliable mean power); with mesio-distal and vestibular-lingual dimensions 32 connections from 304 possible (4.3% direct average forces, 4.9% direct mean unreliable force, 1.0% reverse reliable mean power and 0.3% inverse false positives medium strength);

between the lower SCT and facial skull values, 57 of the 532 possible (10.7%) connections, of which, 4.5% of direct mean strengths, 4.9% of direct mean uncertainties, 0.8% of the reciprocal of the true mean power and 0.6% of inverse unreliable mean forces, among which - with the first teeth, 27 connections from 266 possible (3.4% of direct mean strength, 4.9% of direct unreliable average forces, 1.1% of the reciprocal of average strength and 0.8% of the inverse unreliable mean power); with other teeth, 30 connections of 266 possible (5.6% of direct, average, 4.9% of direct, unreliable average force, 0.4% of the reciprocal of credible average strength and 0.4% of the reciprocal of unreliable mean power); with the height of the teeth and their crowns and the length of the roots 22 of the 228 possible (3.9% direct mean averaged force, 5.3% direct mean unreliable force and 0.4% inverse false median force); with mesio-distal and vestibular-lingual dimensions of 35 connections from 304 possible (4.9% of direct, reliable average forces, 4.6% of direct mean unreliable force, 1.3% of reverse reliable mean power and 0.7% of inverse false positives medium strength).

A quantitative analysis of men in the *southern region* of Ukraine revealed the following distribution of ties:

between the upper SCT and the cerebral skull indicators, 22 out of 256 possible (8.6%), of which 0.8% of the direct mean uncertainty mean, 2.7% of the reciprocal true mean force and 5.1% of the reverse invalid mean power, among which - with first teeth, 2 bonds of 128 possible (1.6% of inverse false mean power); with other teeth, 20 connections of 128 possible (1.6% direct false averages, 5.5% reverse reliable mean power and 8.6% reverse false mean power); with the height of teeth and their crowns and the length of the roots of 15 connections of 128 possible (1.6% direct mean uncertainty average, 3.1% reverse reliable mean power and 7.0% reverse uncertain average strength); with mesio-distal and vestibular-lingual dimensions of 7 connections from 128 possible (2.3% of the reverse reliable mean power and 3.1% of inverse false median force);

between the lower SCT and the cerebral skull indicators, 29 out of 224 possible connections (12.9%), of which 0.9% of the direct mean strength, 1.3% of direct mean uncertainty, 7.1% of the reciprocal of the true average strength and 3.6% of the inverse unreliable mean forces, among which - with the first teeth, 13 connections from 112 possible (0.9% of direct, false median force, 9.8% of the reciprocal true mean force and 0.9% of the reverse invalid average force); with other teeth, 16 out of 112 possible connections (1.8% of direct mean strength, 1.8% of direct mean uncertainty, 4.5% of the reciprocal of credible average strength and 6.3% of the reciprocal of unreliable mean power); with the height of teeth and their crowns and the length of the roots of 27 connections from 96 possible (2.1% direct mean force, 3.1% direct mean uncertainty mean, 15.6% reverse reliable mean

strength and 7.3% reverse invalidity medium strength); with mesio-distal and vestibular-lingual dimensions, 2 connections from 128 possible (0.8% of the reciprocal true mean forces and 0.8% of inverse false median power);

between the upper SCT and the facial skull indicators 68 of the links of 608 possible (11.2%), of which 1.0% of direct mean unreliable strength, 0.2% of the reverse reliable strengths, 3.3% of the reciprocal of the true average strength, and 6.7% of inverse unreliable average forces, including 34 of the first teeth of 304 probable (4.6% of the reciprocal of average strength and 6.6% of the reverse invalid average force); with other teeth, 34 out of 304 probable (2.0% direct, unreliable average strength, 0.3% of the reverse strong strength, 2.0% of the return average, and 6.9% of the inverse unreliable mean power); with the height of teeth and their crowns and the length of the roots of 37 of the 304 possible connections (2.0% of direct mean uncertainty, 0.3% of the voices of the reliable strengths, 2.3% of the reciprocal true mean forces and 7.6% of the inverse unreliable mean force); with mesio-distal and vestibular-lingual dimensions 31 out of 304 possible (4.3% reverse reliable mean power and 5.9% reverse uncertain average power);

between the lower SCT and facial skull values, 47 of the 532 possible (8.8%) connections, of which 1.5% of direct mean strength, 0.8% of direct mean uncertainty, 3.4% of the reciprocal of the average strength and 3.2% of the inverse unreliable mean forces, among which 26 of the first 26 teeth (out of 266 possible (1.5% of direct average strength, 1.5% of direct mean uncertainty, 3.8% of the reciprocal average force) and 3.0% of the inverse unreliable mean power); with other teeth, 21 out of 266 possible (1.5% direct, average, average, 3.0%, and 3.4% of inverse unreliable mean power); with the height of teeth and their crowns and the length of the roots of 35 of the 228 possible connections (2.6% of direct mean averaged force, 1.8% of direct mean uncertainty, 6.1% of the reciprocal true mean force and 4.8% of the reverse invalidity medium strength); with mesio-distal and vestibular-lingual dimensions of 12 bonds of 304 possible (0.7% of direct, reliable average strength, 1.3% of the reciprocal true mean power and 2.0% of inverse false median force).

In line with current trends in medicine aimed at increasing the level of diagnosis and prediction of pathology by developing standards for specific regions, our study allows us to determine the basic correlation necessary for a correct regression analysis, the final result of which will be aimed at eliminating the relevant medical and diagnostic problems in practical dentistry and preventive medicine.

Conclusions and perspectives of further development

1. In practically healthy men, regional peculiarities of the connections of linear dimensions of SCT with the cephalometric indices of the cerebral skull are established: the northern region is direct reliable (r=0.35-0.54) and unreliable mean force (r=0.30-0.49) connections (14.1% on the upper jaw, of which the relative majority are mesio-distal and vestibular-lingual and 21.9% in the lower jaw, of which the relative majority are the height of the teeth and their crowns and the length of the roots); the southern region is mostly reverse reliable (r=-0,35 - -0,52) and unreliable mean strength (r=-0,30 -0,49) connections (8,6% on the upper jaw and 12, 9% on the lower jaw, in both cases the relative majority with the height of the teeth and their crowns and the length of the roots).

2. The regional peculiarities of the connections of linear dimensions of the SCT with the cephalometric indices of the facial skull are established: the northern region is mainly direct reliable (r=0.35-0.53) and unreliable mean strength (r=0.30-0.47) connections (12.0% on the upper jaw, of which the relative majority are the height of the teeth and their crowns and the length of the roots and 10.7% on the lower jaw, of which the relative majority are mesio-distal and vestibular-lingual); the southern region is mostly reverse reliable (r=-0,35 - -0,52) and unreliable mean strength (r=-0,30 -0,48) connections (11,2% on the upper jaw and 8, 8% on the lower jaw, in both cases the relative majority with the height of the teeth and their crowns and the length of the roots).

The prospect of further research is the development of regression models of individual linear sizes of SCT in men of different administrative-territorial regions of Ukraine, depending on features of cephalometric indices, craniotype and face type.

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ОСОБЛИВОСТІ ЗВ'ЯЗКІВ КОМП'ЮТЕРНО-ТОМОГРАФІЧНИХ РОЗМІРІВ МАЛИХ КУТНІХ ЗУБІВ ІЗ КЕФАЛОМЕТРИЧНИМИ ПОКАЗНИКАМИ ПРАКТИЧНО ЗДОРОВИХ ЧОЛОВІКІВ ПІВНІЧНОГО І ПІВДЕННОГО РЕГІОНІВ УКРАЇНИ

Резюме. *У практично здорових чоловіків північного і південного регіонів України встановлені особливості зв'язків лінійних розмірів малих кутніх зубів і їх коренів із кефалометричними показниками мозкового і лицевого черепу. З показниками мозкового черепу в північному регіоні встановлені переважно прямі достовірні і недостовірні середньої сили зв'язки (14,1% на верхній щелепі, з яких відносна більшість з мезіо-дистальними і присінково-язиковими розмірами та 21,9% на нижній щелепі, з яких відносна більшість із висотою зубів і їх коронок та довжиною коренів), а в південному регіоні - переважно зворотні достовірні і недостовірні середньої сили зв'язки (8,6% на верхній щелепі і 12,9 % на нижній щелепі, в обох випадках відносна більшість із висотою зубів і їх коронок та довжиною коренів). З показниками лицевого черепу в північному регіоні встановлені переважно прямі достовірні і недостовірні середньої сили зв'язки (12,0% на верхній щелепі, з яких відносна більшість із висотою зубів і їх коронок та довжиною коренів та 10,7% на нижній щелепі, з яких відносна більшість із мезіо-дистальними і присінково-язиковими розмірами), а в південному регіоні - переважно зворотні достовірні і недостовірні середньої сили зв'язки (11,2% на верхній щелепі і 8,8% на нижній щелепі, в обох випадках відносна більшість із висотою зубів і їх коронок та довжиною коренів).*

Ключові слова: *кореляції, малі кутні зуби, комп'ютерна томографія, кефалометрія, практично здорові чоловіки, регіональні особливості.*

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ОСОБЕННОСТИ СВЯЗЕЙ КОМПЬЮТЕРНО-ТОМОГРАФИЧЕСКИХ РАЗМЕРОВ МАЛЫХ КОРЕННЫХ ЗУБОВ С КЕФАЛОМЕТРИЧЕСКИМИ ПОКАЗАТЕЛЯМИ ПРАКТИЧЕСКИ ЗДОРОВЫХ МУЖЧИН СЕВЕРНОГО И ЮЖНОГО РЕГИОНОВ УКРАИНЫ

Резюме. *У практически здоровых мужчин северного и южного регионов Украины установлены особенности связей линейных размеров малых коренных зубов и их корней с кефалометрическими показателями мозгового и лицевого черепа. С показателями мозгового черепа в северном регионе установлены преимущественно прямые достоверные и недостоверные средней силы связи (14,1% на верхней челюсти, из которых относительное большинство с мезио-дистальными и преддверно-языковыми размерами и 21,9% на нижней челюсти, из которых относительная большинство с высотой зубов и их коронок и длиной корней), а в южном регионе - преимущественно обратные достоверные и недостоверные средней силы связи (8,6% на верхней челюсти и 12,9% на нижней челюсти, в обоих случаях относительное большинство с высотой зубов и их коронок и длиной корней). С показателями лицевого черепа в северном регионе установлены преимущественно прямые достоверные и недостоверные средней силы связи (12,0% на верхней челюсти, из которых относительное большинство с высотой зубов и их коронок и длиной корней и 10,7% на нижней челюсти, из которых относительное большинство с мезио-дистальными и преддверно-языковыми размерами), а в южном регионе - преимущественно обратные достоверные и недостоверные средней силы связи (11,2% на верхней челюсти и 8,8% на нижней челюсти, в обоих случаях относительное большинство с высотой зубов и их коронок и длиной корней).*

Ключевые слова: *корреляции, малые коренные зубы, компьютерная томография, кефалометрия, практически здоровые мужчины, региональные особенности.*

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Стаття надійшла до редакції 21.04.2017 р.

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