CLINICAL AND LABORATORY SUBSTANTIATION OF IMPROVEMENT OF PERIODONTITIS TREATMENT METHODS

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Relevance. Since ancient times, sculptors and artists have paid attention to the aesthetically harmonious proportionality of the external forms of the human body, which, since the Renaissance, as it is believed thanks to L. da Vinci, and up to the present time are described by the concepts of "golden proportion - golden section", where the division of the segment in the middle and extreme ratio of the golden section is mathematically golden proportion equal to the value of 1.618. This number is directly related to many creations of nature in the system of the universe, including human activity [Stakhov A., Sluchenkova A., Shcherbakov I. (2007), Shubnikov A.V., Koptsik V.A. (2004), A.P. Shurbeleva (2003)].

The face plays an important role in the process of interpersonal communication and is the object of research of artists (artists, sculptors, artists), anatomists, psychologists, representatives of medicine: plastic surgeons, maxillofacial surgeons, dentists, dermatologists [BratuD., IeremiaZ., Uram–CuculescuS. (2003), A.P. Shurbeleva.(2003)]. In most cases, the therapeutic action is aimed at eliminating deformations, defects, and disproportions of the face, and the doctor should know and feel the individual harmony of the architectonics of each patient's face, the violation of which can have negative consequences – the loss of the individuality of the face.

This may be the reason for a decrease in the attractiveness of the face to others. Namely, the desire to be attractive is inherent in most people, since an attractive face helps to establish interpersonal contacts, facilitates the solution of tender and career problems [Kovalenko A. V.(2011), Talalaeva E.V.(2012), AlmstrandA.C., JosefsonM., BredbergA.(2010), A.P. Shurbeleva.(2003)].

The attractiveness of the face plays a huge role in the social life of people, being an essential psychosocial factor [Kovalenko A.V. (2011), Talalaeva E.V. (2012), A.P. Shurbeleva.(2003)]. The face largely determines its attractiveness and is the main means of identification and non-verbal communication. According to the results of a study by J. Garwill (1992), 63% of patients believe that their problems with appearance negatively affected their personal life, and 44% – on social life [Kovalenko A.V. (2011), A.P. Shurbeleva.(2003)]. Very often, it is the desire to improve the aesthetics of teeth and face that is the main reason for contacting an orthodontist (KochelJ.Etal., 2010) [Talalaeva E.V. (2012)].

The advertising of "anthropometric standards" by the mass media can be the

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cause of the formation of an inferiority complex in people with deviations in some parameters of the face architectonics and the cause of the emergence of a difficult-to-overcome need for reconstructive operations, which do not always bring them satisfaction, peace of mind and success in solving life problems [Baindurashvilia.A.(2011)].

L.V. Shcherbakova (2005) believes that in recent years there has been a significant number of works devoted to the study of the relationship of head size with somatotypes and proportions of the human body (G.G. Manashev, 2002; I.V. Firsova, 2003; J.H.Gardineretall, 1998; A. Mirzenetall, 2003, etc.) [Shcherbakova L.V. (2005)]. However, as T.V. Matytsina (2005) points out, anthropometric studies of recent years have shown that the physical status of modern man has undergone certain changes compared to that presented in the works of the mid-20th century. There is also a poorly studied question, according to T.V. Matytsina, about the influence of regional peculiarities on the nature of human physical development, age periodization, adopted back in 1965, is not specified, the problems of sexual differences in the physical status of a person, the influence of a complex of internal and external factors on a person, changes in typology, and so on are little touched upon.

And further notes that these problems are important in determining the social status of a modern person, his physical capabilities, in assessing his health, in which since the 70s of the XX century there has been no component of environmental well-being. One of the main conclusions that T.V. Matytsina makes is that in the works devoted to physical development, more attention is paid to the somatotype and much less to the head. Most of the major studies and works are devoted to the skull, about (Martin R., 1928, Speransky B.C., 1988, Zaichenko A.A., 2000 and others) [Matytsinat.V. (2005)].

"L. Pasteur (Pasteur L., 1848) discovered that the symmetrical relationship between right and left is violated at the molecular level, and thereby laid the foundation for the doctrine of molecular asymmetry, which was the initial stage of intensive study of the laterality of organic compounds. Established by P. Broca (Vgoka R., 1861), the fact of the functional disparity of the hemispheres confirmed the ideas of L. Pasteur and allowed the formation of the doctrine of literalization in the central nervous system. A convincing confirmation of the phenomenon of functional disparity was given by clinical studies of A. Sperry (A.W.Speny, 1961), and then S. Spinger and G. Deutsch in the works with a "split" brain" [cit. according to Chermitk.D. (2004)].

Currently, the appearance of a person plays an important role in the formation of personality. The desire to have a beautiful smile, a correct bite is an incentive to consult an orthodontist in order to correct various types of dental anomalies. Etiological factors contributing to the development of dental anomalies are numerous and diverse [2.4.6.8.10]. Their action in different periods of bite formation leads to the appearance of pathology in the dental system of varying severity.

Unfortunately, in the literature available to us, we have not found data on the study of symmetry in the structure and functioning of the human body, as E.Y. Nikolaeva (2007) believes, the diagnosis of facial asymmetry, at first glance, does not present serious difficulties due to the fact that it leads to significant changes in the basic parameters of the face and is accompanied by significant morphological and aesthetic violations. Despite this, the authors' opinions on the prevalence and pathogenesis of this anomaly differ markedly. It is indicated that according to Bogatyrkov D.V. et al. (2003), facial asymmetry occurs only in 1.3–2% of cases,

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whereas scientists at the University of North Carolina (1997) revealed clear signs of facial asymmetry in 34% of the examined patients, and Farkas L.G. and Chung G. (1981), using special anthropometric methods, found asymmetry in all the examined individuals. According to E.Y. Nikolaeva, such a difference in data can be explained, for example, by a wide variety of types of facial asymmetries: skeletal, functional, muscular, articular, as a result of neoplasms or inflammatory processes, as well as post-traumatic asymmetries resulting from improper fusion of the jaws after fractures. There is still no consensus on the question of whether E.Y. Nikolaeva (2009) comes to the conclusion, what should be considered an asymmetry

The purpose of this study is to improve methods for measuring morphometric features and diagnosing morphofunctional disorders of the maxillary system in people with chronic pathologies of the respiratory system.

Research objectives:

1. To identify age-related features of the growth of the gnatic part and the entire facial part of the skull and their effect on the sagittal and vertical dimensions of the face in normal and chronic pathologies of the respiratory system.

2. The tone of the masticatory muscles and the circular muscles of the mouth were studied, its effect on the parameters of the facial skull in patients with chronic pathologies of the respiratory system will be determined.

3. To study the structural features of the facial part of the head in normal and chronic pathology of the respiratory system.

4. To study the clinical and statistical relationship between various telerentgenological parameters to improve the differential diagnosis of the maxillary system in normal and chronic pathology of the respiratory system.

5. To improve the clinical differential diagnosis of varieties of morphometric structures of the maxillary system in normal and pathological chronic respiratory failure.

6. To develop an algorithm for the diagnosis, treatment and prediction of deformities of the maxillary system in normal and chronic pathologies of the respiratory system.

Material and methods. The facial skeleton and dental system of 300 healthy people and 300 people with chronic pathologies of respiratory systems aged from 18 to 60 years will be examined. The main criteria for the selection of people in the study group will be confirmed by morphometric, rengenological, orthopedic methods and clinical and laboratory studies. It should be noted that the surveyed will also be divided into age groups:by age 18-24 years, 25-34 years, 35-44 years and 45-60 years old and by severity of chronic respiratory pathology.

The research program at all stages will include both traditional and special methods of clinical and dental examination.

a) clinical and dental research methods

b) study of functional occlusion and evaluation of conflict relationships

c) anthropometric methods

d) biometric study of diagnostic models of jaws

e) study of facial proportions

e) assessment of the degree of need for orthodontic treatment

a)Enzyme immunoassay methods: immunoglobulin A, M, J, secretory immunoglobulin A, hormones (cortisol, TSH), antiproteases (ceruloplasmin, transferrin, antitrypsin, TNF-α, IL-1, 4, 6, 10, CRP).

b) Biochemical methods: acid-base state of blood and saliva, lysosomal enzymes of blood and saliva, the level of magnesium in saliva);

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c) Functional methods: ultrasound, densitometric, X-ray, rheographic;

d) statistical methods.

Periodontal diseases are one of the urgent problems of modern dentistry and occupy the second place in frequency after dental caries [1.3.5.7.9]. According to WHO, the prevalence of this pathology is steadily increasing and, according to the results of the study of epidemiological aspects, reaches 98%. The main role in the occurrence and development of inflammatory periodontal diseases (VZD) is assigned to local factors, such as microbial plaque, represented by the association of microorganisms [11.13.17]. The bacterial flora of dental plaque is currently considered as the primary factor causing inflammatory periodontal diseases. During the formation of dental plaque, i.e. aggregation of bacteria on the tooth surface, the prevalence of gram-positive flora and cocci is characteristic.

Then there is stabilization of the dental plaque, aggregation between streptococci and actinomycetes. Due to the active reproduction and proliferation of bacteria, there is an increase in the mass of dental plaque, a decrease in the proportion of streptococci, an increase in facultative and anaerobic actinomycetes, gram-negative rods and cocci. The subsequent deepening of the gingival furrow and swelling of the gum as a reaction to the supradingival plaque leads to the formation of a subgingival section of the biofilm. The latter consists of pathogenic microorganisms represented mainly by gram-negative and obligate anaerobic bacteria, fusobacteria, spirochetes and others. In the biofilm, bacterial colonies exhibit special properties such as metabolic cooperation, a primitive system of communication and exchange of genetic information, resistance to phagocytosis, suppression of neutrophil granulocytes, resistance to antibiotics due to binding to the matrix, an increase in the pathogenicity of organized bacteria in the biofilm [10.12.14.16.18.20.22.24.26.28.30.32.34].

Currently, some types of microorganisms are considered as specific periodontal pathogens that determine the leading role in the development and progression of periodontal disease. This group of particularly virulent bacteria with the most pronounced destructive potential includes Porphyromonas gingivalis, Actinobacillus actinomycetemcomitans, Bacteriodes forsythus, Prevotella intermedia, Actinomyces israelii, Treponema denticola, Campylobacter rectus, etc. It has been established that exo- and endotoxins produced by these microorganisms determine long-term inflammation and destruction of gum and alveolar process tissues.

A statistically significant relationship between an increase in the detection rate of P. Gingivalis or A. Actinomycetemcomitans and the depth of the periodontal pocket, the important role of gram-negative anaerobic bacteria A. Actinomycetemcomitans, P. Gingivalis, P. Intermedia, B.forsythus and T. Denticola in the development and progression of periodontitis has been confirmed. There was a direct relationship between the indicators of the oral hygiene index and the intensity of periodontal inflammation [19.21.23.25.27.29.30.31.33.35].

The role of identification of yeast-like fungi of the genus Candida in the periodontal pocket as one of the indicators of the extreme degree of dysbiosis has been established.

A large number of modern studies are devoted to the study of the role of viral infection in the etiopathogenesis of inflammatory periodontal diseases. A number of researchers have established a connection between the persistence of Herpesviruses and the presence of Porphyromonas gingivals, one of the most common representatives of periodontopathogenic microflora.

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J. Slots (2004) determined the relationship between the presence of cytomegalovirus in periodontal tissues, the detection of Dialister pneumosintes in the periodontal pocket and the degree of atrophy of the alveolar bone.

According to J. Slots (2004), in the pathogenesis of inflammatory periodontal diseases, the role of herpesvirus infections Herpesviruses has been established, which damage the immune control of the qualitative and quantitative composition of resident microorganisms and may participate in several links in the pathogenesis of periodontitis: activation of persistent viruses, activation of periodontopathogenic microflora, development of immune reactions of the macroorganism [23.25.27].

Detection of G-class immunoglobulins to herpes simplex virus and cytomegalovirus in the blood serum of patients suffering from periodontitis using ELISA. 80% of patients with CGP in the acute phase showed signs of secondary immune deficiency against the background of recurrent herpesvirus infection. The degree of influence of the chronic odontogenic inflammatory process on the state of the macroorganism was determined by the method of fluorescent probes.

An informative parameter that characterizes both the functionality of albumin and the level of intoxication is the binding ability of albumin. The binding capacity of albumin reflects the maximum number of molecules that the latter can bind in the blood. In inflammatory periodontal diseases, a decrease in the binding capacity of albumin involved in the transport and deactivation of toxins and waste products of bacterial origin was found [31.33.35]. Insufficient production of thyroid hormones as a result of metabolic disorders leads to the accumulation of metabolic products in the body.

The total albumin concentration (OCA), the effective albumin concentration (EKA), as well as the integral values of the albumin binding reserve PCA=EKA/OKA x 100% and the toxicity index IT=OKA/EKA-1 were determined. The studies were carried out using sets of reagents "Probe-albumin" (manufactured by NIMVC "Probe", Moscow) in accordance with the attached instructions on the lipid concentration analyzer AKL-01. A dye (K-35) was used as "fluorescent probes", the molecules of which are able to block the ligand binding centers of metabolites in albumin [31]. The study of the binding capacity of albumin was conducted at the Central Research Institute of the State Medical University of the Russian Academy of Health (MD, Professor Bazarny V.V.). Complex treatment of chronic generalized periodontitis in patients with primary hypothyroidism was carried out against the background of hormone replacement therapy with levothyroxine drugs according to the scheme prescribed by an endocrinologist.

Oral hygiene. At the initial stage, the patient was trained in oral hygiene, rules, methodology, frequency of its implementation, selection of personal hygiene products and instruction on their use with demonstration on dummies was carried out. The hygienic condition of the oral cavity was monitored at each subsequent visit. At the next stage of treatment of patients with chronic generalized periodontitis on the background of primary hypothyroidism, massive supra-gingival dental deposits were removed, which was carried out using an ultrasound device "Suprasson P Max" ("Satelec", Germany) after antiseptic treatment and appropriate anesthesia.

Then a thorough removal of subgingival dental deposits and polishing of the surfaces of the roots and the postgingival surfaces of the crowns of teeth was carried out using the VECTOR ultrasound machine (Durr Dental, Germany).

Local conservative treatment in the main group was carried out by the introduction of antibacterial and antiseptic

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drugs through the device of bioregulated low-frequency electromagnetic therapy ANE601 "Hephaestus" according to the method developed by us. As a physical factor, a low-frequency pulsed complex modulated (ISM) electromagnetic field (EMF) was used, which was formed with the parameters: modulation frequency in the range from 0.3 to 0.8 Hz, pulse repetition frequency in the range from 3 to 30 Hz, the width of the spectrum of harmonic components in the range from 500 Hz to 1 kHz, magnetic field induction intensity from 8 to 12 MT.

The magnitude of the amplitude of electromagnetic oscillations induced in the tissue by external electromagnetic fields as a result of its bioelectric activity was preliminarily fixed, according to which the initial parameters of the EMF IMS were formed. A comparative study of transcutaneous conductivity has shown the advantage of organosilicon glycerohydrogel in relation to tizol and dimethyl sulfoxide [24]. In addition, silicon as an essential element has an additional positive effect on the body, allowing you to regulate silicon metabolism in organs and tissues and replenish its content in case of a shortage. Due to the ability of the silicon trace element to have a pronounced stimulating effect on epithelial, connective, and bone tissue, the use of silicon-based glycerohydrogels in the complex treatment of periodontitis significantly improves metabolic and regenerative processes in the damaged periodontal. The absence of antagonism directly between the medicinal ingredients and the ointment base — organosilicon glycerohydrogel - makes it possible to combine them unchanged without reducing antimicrobial and antibacterial activity.

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