INDIVIDUAL VARIABILITY OF THE STRUCTURE OF THE CONDUCTING SYSTEM OF THE HUMAN HEART

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Key words: *heart, anatomy, variability, conducting system*

Background. Development of surgical treatment methods of arrhythmia and congenital heart defects to a large extent by the correct assessment of the cardiac conducting system (CCS) structural variability.

Aim. The aim of this work is to study individual differences in position, size and shape of parts of the CCS atrioventricular portion in terms of age and with regard to the cardiac structure.

Material and Methods. By applying generally accepted morphological methods in 501 heart specimens of fetuses, children and adults of both sexes and different ages, studied the position, size and configuration of the atrioventricular node, AV bundle and its branches with regard to the structure of cardiac ventricles and portions of the interventricular septum (sinus, trabecular, conica).

Results and Discussion. In prenatal and postnatal periods of ontogenesis are similar variants of the structure of the ventricles of the heart with certain proportions of the linear dimensions inflow and outflow sections, parameters parts of interventricular septum (IVS). Each of options of structural organization of heart ventricles and its IVS corresponds to set of specific features of portions of cardiac conducting system, signifying change of the positional angles, linear dimensions and shape. It was to the AV bundle and sine of the IVS of the correlation pair.

Conclusions. Form of the sine part, ratio of its parameters can be used as a criterion for estimating the length of preventive AV bundle without its isolation.

SOMATOTYPE OF MACEDONIAN ADOLESCENTS AGED 11 TO 14 YEARS

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Key words: *adolescents, growth, somatotype, endomorph, Macedonia*

Aim. The aim of this study was to evaluate sex and age-specific differences of somatotype in adolescents aged 11 to 14 years of Macedonian nationality.

Material and Methods. This study included 873 adolescent students (453 males and 420 females) at the age of 11 to 14 years from three urban cities in Republic of Macedonia (Skopje, Kumanovo and Strumica). Ten anthropometric parameters: body height, weight, elbow and knee diameter, triceps, subscapular, supraspinale and calf skinfold, arm and calf circumferences were measured using standard equipment and measurement technique to assess the somatotype according to Heat-Carter somatotyping method. For evaluation of somatotype software package Somatotype-Calculation and Analysis was used. Testing of sex and age-specific differences was done with analysis of variance. Differences for $p<0.05$ were considered to be statistically significant.

Results and Discussion. At the age of 11 and 12 years in both males and females dominate two somatotypes: mesomorph endomorh and balanced ectomorph. Sex-specific differences were found for endomorph component at the age of 14 years in favour of females, and for mesomorph component at the age of 14 years in favour of males. Age differences were found only in males at the age of 12 years.

Conclusions. There are sex and age differences of somatotypes in Macedonian adolescent population after the age of 13 years. The obtained values can be recommended for practical use for better understanding of changes in body composition and sex differences in somatotypes.

POSTNATAL DEVELOPMENT OF THE UPPER JAW

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Key words: *maxilla, upper jaw, development, teeth eruption, maxillofacial surgery*

Background. Postnatal development of upper jaw is complicated process highly influenced by teeth eruption and sinus development.

Aim. The aim of our study was to elucidate dynamics of this process and investigatechanges in dimensions of different parts of upper jaw.

Material and Methods. In our study we used 255 maxillae (age range: birth-30y) from skull collection of Institute of Anatomy. We measured longitudinal (A1=maximal bone length; A2=orbital surface length; A3=palatine process length), transversal (B1=maximal bone width; B2=palatine process width) and vertical (C1=maximal bone height; C2=orbital margin-alveolar edge; C3=infraorbital foramen-alveolar edge; C4=anterior nasal spine-alveolar edge) dimensions using caliper. For each dimension growth index (adult dimension/dimension at birth) was calculated.

Results and Discussion. All measured dimensions increased linearly till the end of puberty but they didn't increase at the same rate. Growth rates for all dimensions were similar in the first year of life but after that period growth rates of vertical dimensions became much higher compared to those of longitudinal and transversal dimensions. The highest growth index was observed for vertical dimensions (C3=3.37; C2=3.19; C4=2.6; C1=2.57)while for the other dimensions growth index was moderate (between 1.79 and 1.97).

Conclusions. During postnatal development of upper jaw there is biggest increase in vertical dimensions while longitudinal and transversal dimensions increase at almost the same rate. The increase in vertical dimensions growth rate after the first year of life correlates with the teeth eruption and maxillary sinus pneumatization. Understandingnormal development of maxilla is important in maxillofacial surgery and diagnosis of upper jaw malformations.

SOME ASPECTS OF ADAPTATION OF THE FOREIGN STUDENTS ON THE EXAMPLE OF ANATOMY TEACHING

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Key words: *adaptation, English medium education, teaching Anatomy, language problems*

Aim. Analysis of the problems associated with psychological readiness of foreign students to study at a medical university on the example of studying anatomy.

Material and Methods. Survey of 55 1st year students from non-CIS countries and CIS countries (average age — 21 and 19.5 years, respectively), qualitative analysis of the answers to the questionnaire and their quantitative statistical processing using MS Excel.

Results and Discussion. The main questions in the questionnaires were aimed at identifying three groups of factors affecting the adaptation processes: psychophysiological, educational and socio-cultural. Students from India, Egypt, Syria, Lebanon, Iraq, studying in English, noted the presence of difficulties in all three groups. The most commonly they mentioned underdeveloped English-speaking environment (complexity in the explanation of their condition in the university clinic (87%), the librarians who are not proficient in spoken English (67%), not enough English-speaking physicians leading in the clinical practice (34%)). Students from India noted a shortage of English-speaking workers in shops (29%), passers-by on the street, etc. Students from Arab countries noted difficulties in preparing a large amount of material for classes (42%), due to insufficient knowledge of English (23%), and a shortage of English literature on the specialty in the University library (37%). Students from the CIS countries (Tajikistan, Turkmenistan, Uzbekistan) also unanimously note the language problems while communicating with doctors in the university clinic (82%) and the need to read a large amount of educational information (47%). Unlike English-speaking students, they study in mixed groups, often calling relations with Russian-speaking students in the group to be problematic (21%).

Conclusions. Thus, the trial survey shows the need to improve the existing English-speaking environment and special measures to facilitate the psychophysiological and socio-cultural adaptation of foreign students regardless of the language of instruction.

SURGICAL INTERVENTIONS WITH PHLEGMONS OF DEEP CELLULAR SPACES OF THE HEAD AND NECK COMPLICATED BY MEDIASTINITIS

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Key words: *phlegmon, mediastinitis, computed tomography, mediastinotomy, drainage*

Aim. Improving the effectiveness of surgical treatment of phlegmon deep cell tissue spaces of the head and neck complicated by mediastinitis.

Material and Methods. Over the past 20 years, 82 patients with phlegmons of deep cell spaces (CP) of the head and neck were on treatment. Sources of phlegmon: peritonsillar abscess (n=30), epiglottis abscess (n=27), odontogenic (n=14) and traumatic causes (n=14), adenophlegmons (n=5).

Results and Discussion. Mediastinitis developed in 52 patients. X-ray of chest organs was performed by all patients with neck phlegmon. In 30 observations she allowed to identify, and in 10 — to suspect the presence of mediastinitis. Computed tomography in all cases allowed diagnosing phlegmon of the neck and revealing mediastinitis. All patients are operated under intravenous anesthesia with artificial ventilation. With a sharp edema of the larynx, intubation was performed under the control of the bronchoscope, which allowed to avoid tracheostomy and development of purulent tracheobronchitis. In the presence of phlegmon of the neck — a cortical mediastinotomy according to V. I. Razumovsky, which allows to widely open and drain all the anatomical spaces of the anterior region of the neck and deep spaces of the head. The wound was not closed for subsequent stage necrectomy. With odontogenic phlegmon,