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.