

#### COMPUTED TOMOGRAPHIC EVALUATION OF CRANIOFACIAL PARAMETERS FOR SEXUAL DIMORPHISM IN SOUTH INDIANS

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**Key words:** CT skulls, cranial measurements, sexual dimorphism, south Indians

**Background.** Determination of sex from bony elements is the fundamental step to human virtue. Direct assessment of the bones is not always most appropriate or practical.

**Aim.** The aim of our study was to examine the reliability of cranial measurements for sex differences in computed tomography head scan records of adult live subjects to the highest possible percentage and to develop discriminant function equations.

**Material and Methods.** Seventy head computed tomography records were taken and 16 parameters were measured using RadiAnt DICOM viewer software. The data was analyzed using SPSS software.

**Results and Discussion.** The classification accuracy obtained by multivariate analysis of all 16 variables was 97.1%, multivariate analysis of 9 most significant variables was 91.4% and by stepwise was 92.9% and that by univariate analysis for bizygomatic breadth, orbital breadth, basion-bregma height and inter-orbital breadth was 81.4, 74.3, 72.9 and 70%, respectively.

**Conclusions.** Multivariate analysis gave the highest classification accuracy and bizygomatic breadth, orbital breadth, basion-bregma height and inter-orbital breadth were the most dimorphic variables in our study population and several other populations, and thereby should always be considered in the sex determination of humans.

#### ANATOMIC AND X-RAY JUSTIFICATION OF THE METHOD OF LOCAL ANESTHESIA IN THE AGE ASPECT IN DENTISTRY

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**Key words:** x-ray, local anesthesia, mandible, teeth, children

**Aim.** To study the anatomical and radiological prerequisites for carrying out local anesthesia on the mandible in pediatric dentistry from the point of view of Wright's rule.

**Material and Methods.** 120 computer tomographs of the mandible of children aged 5 to 12 years without pathology of the maxillofacial area were examined. A mathematical calculation of the thickness of the cortical plate in the cervical (C), middle (M) and apical third (A) parts in the area of the teeth 8.3 (7.3), 8.4 (7.4), 8.5 (7.5), 3.6 (4.6). For the anatomical study, skeletal mandibles of children from 4 to 7 years of age were used. Morphometric measurements of bone structures were performed on the mandible. Wright's rule was used in the following formulation: if the number of full years of the child in the amount of the ordinal number of the tooth in the Roman style is 10 or less, infiltration anesthesia will suffice to anesthetize this tooth.

**Results and Discussion.** The tendency to compact the cortical plate is determined in proportion to the age of the child. However, with the imposition of empirical values according to Wright's rule on the anatomical and x-ray characteristics, the mathematical model lags behind the biological model. It was also noted that the organization of bone structures is faster for girls.

**Conclusions.** The use of the X-ray method of investigation makes it possible to use it as a tool for choosing the method of local anesthesia of molars and canines teeth in pediatric dentistry.

#### DIAGNOSIS AND TREATMENT OF PATIENTS WITH ARTERIOVENOUS MALFORMATIONS OF HEAD AND NECK USING 3D MULTIDETECTOR COMPUTER TOMOGRAPHY ANGIOGRAPHY

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**Key words:** arteriovenous malformation, treatment

**Aim.** The goal of our investigation was to optimize diagnosis and treatment of patients with arteriovenous malformations (AVM) of head and neck using 3D multidetector computer tomography angiography (MDCTA).

**Material and Methods.** 24 patients aged 15–52 years (14 male and 10 female) with diagnosis extracranial AVM of different localization in head and neck region were examined and treated. Examination included clinical, laboratory, ultrasound diagnosis, MDCTA and digital subtraction angiography. Treatment plan was created individually in each case, based on the data gained by diagnostic procedures. Treatment options included surgical treatment, embolization of AVM or combined treatment. In certain cases several steps of treatment were planned. Patients were observed after treatment for 5 years.

**Results and Discussion.** AVM were localized in one or several regions including frontal, tem-