RECCURENT STROKE PREVENTION METHODS COMPARISON: PATENT FORAMEN OVALE CLOSURE OR MEDICAL THERAPY?

Gorlenko K., Kiselev G., Valuev G., Popova E.

Sechenov First Moscow State Medical University, Moscow, Russia
mr.gorlenko@mail.ru

Key words: *recurrent stroke, patent foramen ovale, device closure, medical therapy*

Background. Recent studies have shown correlation between recurrent stroke occurrence and patent foramen ovale (PFO). Its occurrence causes paradoxical embolism following recurrent stroke as the most likely mechanism which consists of thrombus transfusion through PFO from right to left atria.

Aim. To compare safety and efficiency of PFO closure and medical therapy alone for preventing recurrent stroke.

Material and Methods. We had a look into the matter of NCBI PubMed, Elsevier, Scopus, Embase and the Cochrane Central Register of Control Trials databases.

Results and Discussion. Common model of closure device consists of 2 discs connected by thin waist. There are 3 main complications in case of closure devices usage: thrombus formation on the side of device or in the left auricle; device subunit erosion which leads to abrasion at the roof of the atria or aorta and pericardial effusion; atria fibrillation which results in disturbances of heart cycle what leads to lack of ventricle blood supply and heart failure. Device closure results in a significant reduction in recurrent stroke (49%). Trivial medical treatment program contains usage of aspirin, low molecular weight heparin and warfarin. The most important complications in the subject of this method are bleedings, neuphrotoxicity and Reye syndrome. Reduction in recurrent stroke is 25%.

Conclusions. Although per cent of recurrent stroke reduction with device closure of PFO is exponentially higher, there are a lot of severe complications which can damage patient's health. The efficiency of PFO closure may be increased by anticoagulant therapy using, for example with clot deformation on the sides of the device.

THE DEPENDENCE OF THE LIVER VOLUME ON THE TYPE OF PHYSIQUE ACCORDING TO THE DATA OF SPIRAL COMPUTED TOMOGRAPHY AND SECTIONAL STUDY

Gubar A. S., Chaplygina E. V., Kaplunova O. A.

Rostov State Medical University, Rostov-on-Don, Russia
alexandrgubar@rambler.ru

Key words: *liver, spiral computed tomography, anthropometric data*

Aim. Based on the data obtained during the spiral computed tomography (SCT) and autopsy, to determine the volume of the liver of the examined persons, taking into account the type of physique, followed by a comparison of the results.

Material and Methods. Computer tomograms of 205 people of both sexes of the youth and the first period of adulthood were analyzed. The examined persons were divided into 3 groups in accordance with the classification of L. Rees — H. J. Eysenck (1945) both during the spiral computed tomography and during the sectional studydepending on body type. For each group, the volume of the liver was determined, followed by a comparison of the results.

Results and Discussion. The volume of the liver in conducting SCT was the highest among the examined individuals endomorph body type (1590.8±43.3 cm^3), minimum — in persons of ectomorph body type (1164.9±41.7 cm^3), the persons of mesomorph body type (1338.7±21.4 cm^3) occupied intermediate values. The volume of the liver on autopsy was maximal at dead people endomorph body type (1748.3±22.1 cm^3), minimum — in the dead of ectomorph body type (1348.2±31.5 cm^3), dead mesomorph body type of the obtained intermediate values (1538.8±31.1 cm^3). Differences between the groups were statistically significant ($p<0.05$).

Conclusions. During the SCT, significant differences between groups of people with different body types were established, which was confirmed during the sectional study. Taking into account the anthropometric data of the individual will allow to avoid errors in the interpretation of the data obtained during the spiral computed tomography of the liver anatomy.

THE FREQUENCY OF OCCURRENCE OF DIFFERENT ANATOMICAL VARIANTS OF THE LIVER POSITION IN THE ABDOMINAL CAVITY ACCORDING TO THE DATA OF SPIRAL COMPUTED TOMOGRAPHY

Gubar A. S., Chaplygina E. V., Kaplunova O. A., Sukhanova O. P., Blinov I. M.

Rostov State Medical University, Rostov-on-Don, Russia
alexandrgubar@rambler.ru

Key words: *liver position, abdominal cavity, spiral computed tomography*

Aim. Based on the data, obtained during the spiral computed tomography, to determine the frequency of occurrence of different anatomical variants of the liver position in the abdominal cavity of the examined persons.

Material and Methods. Computer tomograms of 205 people of both sexes of the youth and the first period of adulthood were analyzed. The examined persons in accordance with the classification of Voilence V. N., Medelyan A. I., Omelchenko V. M. (1965) were divided into 6 groups depending on the anatomical variant of the

spatial orientation of the organ in the abdominal cavity relative to the frontal and sagittal planes.

Results and Discussion. Liver displacement relative to the frontal plane of anterior (anteflexio) was determined in 34 people (16.5%); posterior (retroflexio) — in 13 people (6.4%). Displacement of the liver relative to the sagittal plane to the right (dextropositio) found in 54 of the examined persons (26.3%), while displacement of the liver to the left (sinistropositio) found in 13 patients (6.4%). The intermediate position of the liver is 67 people (32.7%). The combined liver displacement in both sagittal and frontal planes was revealed in 24 patients (11.7%).

Conclusions. Taking into account the anatomical variability of the liver position in the abdominal cavity will allow to avoid errors in the interpretation of morphometric parameters of the organ, and will provide additional information to surgeons that can optimize the operational access to the liver.

CLINICAL AND RADIOLOGICAL DIAGNOSIS OF ANOMALIES OF DENTITION IN CHILDREN WITH PSYCHONEUROLOGICAL DISORDERS

Gulenko O. V.

Kuban State Medical University, Krasnodar, Russia

Key words: *computer tomography, orthopantomography, children, psychoneurological disorders, congenital anomalies, teeth*

Background. Dental morbidity in children with psycho-neurological disorders (PNR) is much higher than in children without comorbid pathology.

Aim. Dental disturbances in the studied category of patients can be considered as a direct consequence of the perinatal pathology of the nervous system.

Material and Methods. In the survey, 267 children of the main group aged 7–17 years with psychoneurological disorders of varying severity participated. Control group — healthy children of similar age. X-ray examination in children of the main group with deviant forms of behavior (70.5%) was performed on an outpatient basis under anesthesia.

Results and Discussion. Analysis of computer tomography and orthopantomograms of jaws revealed a high percentage (43.7%) of congenital pathology (primary adentia, true follicular cysts and superfine permanent teeth) in children with PNR in comparison with the control group (8.3%). Perhaps, this is due to factors acting at different stages of development, especially in the period of histoorganogenesis of the neural tube and oral cavity (from 5–6 weeks of embryonic development).

Conclusions. Systematization of dentition anomalies will allow standardizing and unifying surgical care for children with PNR congenital pathology and optimizing the planning of orthodontic and prosthetic treatment. Children who have a history of pre-, intra- and postnatal factors in the development of central nervous system pathology are recommended to be included at the risk of developing major dental diseases at birth.

3D AESTHETIC ANALYSIS OF ORBIT AND PERIORBITAL REGION

Guryanov R. A. [1], *Zotkinb D. A.* [2], *Zabolotnayac E. N.* [3]

[1] Department of oncology and reconstructive surgery, plastic surgeon,[2] Department of anatomy, Sechenov First Moscow State Medical University; [3] Sechenov First Moscow State Medical University, Moscow, Russia
robert.gurianov@gmail.com

Key words: *3D analysis, negative vector, blepharoplasty, midface, ophthalmometry*

Background and Aim. Evaluation of preoperative and postoperative conditions is essential in lower lid blepharoplasty and midface lift. The laxity of the lower lid and insufficient malar bone prominence accompanied by excessive eye prominence known as a «negative vector» are the common condition which can lead to unsatisfactory aesthetic result and various ophthalmological complications. At the current moment the pre- and post-operative evaluation is based on two-dimensional photography and physical examination.

Material and Methods. We developed the 3D evaluation methodology for the midface region based on photogrammetric study and computed tomography. The photogrammetry scanning is performed on a patient in upright position. On CT images the skeletal tissue of face, eye globes and soft tissue complex are segmented and calculation of 3D models of these structures in performed. Then the acquired 3D model is aligned to soft tissue model from CT data by defining points and regions.

Results and Discussion. The relative position of the eye globe to orbit and orbital rim is assessed by the mass center of these anatomical structures. To correlate the traditional ophthalmometry the eye prominence is measured from bicanthal frontal plane. The skin surface geometry is analyzed by curvature analysis allowing contrasting relief features as a nasojugal groove, nasolabial fold and tearing trough. To evaluate its ptosis degree the position of the nasojugal groove is measured relatively to the arcus marginalis. Soft tissue thickness analysis is performed to access the midface soft tissue distribution.

Conclusions. The described analysis method is able to provide substantial data for clinical evaluation of periorbital region.