

Material and Methods. The material of the anatomical section of the study was the *in vivo* computed tomograms of the thorax of 115 patients who had no digestive pathology, and 40 patients examined and operated in the Orenburg cancer clinic with a diagnosis of breast cancer of the esophagus. The paper uses the following methods: computed tomography; morphometry and variation-statistical processing of the data.

Results and Discussion. The average values of the anterior-posterior size of the mediastinum increased from 54.8 ± 0.7 mm at the level of the sternoclavicular articulation to of 129.7 ± 2.0 mm at the level of the base of the heart, the transverse dimension of anterior mediastinum, respectively, of a 60.3 ± 1.4 to 102.0 ± 2.5 mm, the transverse dimension of the posterior mediastinum from 21.7 ± 1.4 to 32.8 ± 1.4 mm. When cancer of the thoracic esophagus is the displacement of the heart anterior and left with an approach to the anterior thoracic wall to an average of 4.8 mm, the trachea and the left main bronchus anteriorly, the descending part of the thoracic aorta to the left and posteriorly with the movement of the lateral surface of the vertebral bodies. After resection of the esophagus with autogastroplasty due to the movement of the posterior mediastinum of the gastric graft, in the first two weeks after the operation, there is a decrease in the anterior dimension of the mediastinum, an increase in the transverse size of the posterior mediastinum with its displacement to the right of the median plane, preserving the displacement of the heart forward to the sternum, and the thoracic aorta to the left on the lateral surface of the vertebral bodies. By three months, the gastric graft occupies the position of the esophagus in the posterior mediastinum, the mediastinum parameters return to the preoperative parameters and remain in the long term.

Conclusions. In the course of the study, new *in vivo* data on computer tomographic anatomy and topography of the mediastinum and its organs were obtained.

EFFECT OF SUPERIMPOSITION OF THE VASCULAR DAMAGE ON SCIATIC NERVE INJURY

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Key words: nerve, injury, vascular damage

Despite traumatic nerve injuries has been well documented in literature, vascular injuries of the peripheral nerve has not been extensively studied. It is not well understood if the nerve affected from mechanical trauma or ischemic insult results to degeneration by interruption of axonal traffic and

flow. Although peripheral nerves have extensive anastomotic channels. it is interesting that ischemic insult should have been compensated by collateral system of the epineurial vessels. In the present study we aimed to study effect of vascular damage on axonal degeneration and regeneration process. We found that superimposition of the vascular damage aggravated severity of the trauma. We think that further studies should be carried to understand vascular damage of the peripheral nerves.

EFFECT OF ILOPROST ON FUNCTIONAL RECOVERY AFTER CRUSH INJURY OF THE SCIATIC NERVE

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Key words: functional recovery, crush, injury, nerve

Background. Vascular damage of the sciatic nerve results to subperineurial degeneration/demyelination injury.

Aim. In the present study, it was aimed to study the effect of iloprost on recovery of the sciatic nerve after crush injury.

Material and Methods. A total number of 40 Wistar rats were used for this purpose and divided into four groups [Group 1: Control, Group 2: Sham, Group 3: Crush injury+iloprost (–), Group 4: Crush injury+iloprost (+)].

Results and Discussion. Sciatic nerve regeneration was evaluated by walking track analysis, pinch test, light and electron microscopy and antioxidant effect of iloprost was evaluated by biochemical analysis.

Conclusions. Sciatic function test, pinch test, electrophysiologic, and biochemical analyses revealed that the iloprost showed a beneficial effect on recovery of function after crush injury.

APPLICATION OF POLYMERS FOR PLASTINATION OF TEACHING ANATOMICAL AND BIOLOGICAL SPECIMENS

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Key words: anatomy, education, formalin, polyester

Background. Plastination was fabricated in 1978 by Dr. Gunther Von Hagens at the University of Heidelberg, Germany, which keeps for good conservation of anatomical and biological material.

Aim. Our goal was to use a cost effective plastination polymers as compared to standard S10 technique that using silicone polymers.

Material and Methods. The S10 is the original silicone polymer used for preparation of plastinated specimens and whole dissecting body. Specimens were fixed in formalin, dehydrated and decreasing

in acetone, and at last impregnated by local commercial unsaturated polyester resin and ultimately hardening at 50 °C temperature.

Results and Discussion. The plastinated specimens are clean, curable, odorless, portable and non-toxic, it can be keeps for long durations without any changes the usage of widespread S10 silicon method is high costs so with the aid of using indigenious chemicals it is possible to produced low costs anatomical models for education and for studying anatomy.

THE MORPHOLOGY OF CEREBRAL CORTEX GANGLIONIC LAYER IN ISCHEMIC STROKE

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Key words: ischemic stroke, cerebral cortex, morphology

Aim. To reveal morphofunctional changes in the ganglionic layer of the pyramidal cortex of both hemispheres of the brain of people who died as a result of ischemic stroke.

Material and Methods. Samples of cerebral cortex 9 died as a result of left middle cerebral artery ischemic stroke human from 3 areas (1 — adjoining directly to the site of necrosis, 2 — 5–10 cm distant from the previous 3 — the area of the contralateral hemisphere symmetrical hearth) were investigated. Samples were stainedstained with cresyl violetand hematoxylin-eosin; p53 and NSE proteins were detected by indirect immunoperoxidase immunohistochemistry. All samples were examined by light microscopy.

Results and Discussion. Morphometric analysis revealed that the number of damaged bodies of neurons of ganglionic cell layer was greatest in the samples of the ipsilateral hemisphere (zone 1 and 2) and minimal in the zone 3. The relative content of reactively altered nerve cells was the smallest in the samples of the contralateral hemisphere. In the zone 2, all neurons were significantly altered, and in the remote from the border region by 5–10 cm, the number of reactively altered neurons significantly prevailed over the unaltered. Hhe highest number of p53 positive pyramidal cells was observed in zone 2; in zone 1 and 3 the number of labeled cells was comparable.

Conclusions. With the development of ischemic stroke, quantitative and qualitative changes occur in both hemispheres of the brain. Areas of maximum changes are distributed unevenly.

NEW DATA ON HUMAN VERTEBRAL COLUMN STRUCTURE ANATOMY IN THE INTERMEDIATE FETAL PERIOD OF DEVELOPMENT

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Key words: vertebral column, development, anatomy, fetal

Aim. To determine the presence of the spinal congenital anomalies and the degree of violation doctors need detailed information on the spinal structures morphology. The purpose of this study was to obtain morphometric data on the structure of the vertebral column on the prenatal stage.

Material and Methods. The study was carried out on 30 fetuses of 16–22 weeks of development using the method of macromicroscopic preparation, method of cuts according to N. I. Pirogov and histotological method.

Results and Discussion. The study of sectional material has established that the vertebral column has already been formed in the 16–22 weeks of development. The lumbar lordosis was detectedin all cases, the cervical lordosis and thoracic kyphosis were present in half of cases. Vertebral foramen were relatively wide and had an oval shape. There was a gradual narrowing of the vertebral foramenfrom L₅ to Sc₅, which has become a narrow slit at the level of coccygeal vertebrae. It was noteworthy that the vertebral arcs were not yet fused with the body. The average value of the transverse dimension of the vertebral body wasincreased from C₁ (2.3±0.65 mm) to L₃ (7.71±1.1 mm), then stabilized through L₄–L₅ and decreased to Sc₅ (1.84±0.43 mm).The sagittal size of the vertebral body wasincreased from C₁ (1.9±0.52 mm) to T₅ (5.95±0.87 mm), then the stabilization to L₃ (5.31±0.91 mm) was observed. The lowest values were established in the sacral part (from Sc₁ — 3.46±0.76 mm to Sc₅ — 1.95±0.37).

Conclusions. Results of research can be used in fetal diagnosis and therapy of deeply prematurely born newborns.

NEW ANATOMICAL DATA ON RECTUM AND ITS RELATIONSHIP WITH BONE STRUCTURES IN FETUSES AT 16–22 WEEKS OF DEVELOPMENT

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Key words: rectum, bone, developmental anatomy, relationship

Background. Nursing of deeply premature neonates and progress of the intrauterine operations on the fetal pelvic organs dictate