line through the center of the vertebra body (OY axis) was drawn. The perpendicular line through middle of spinal canal was drawn (OX axis).

Results and Discussion. The measurements of the right side showed the following: concerning the OX axis the superior pole is displaced on a distance of 19.9±6.5 mm, the kidney at the level of the hilum on a distance of 20.3±6.3 mm, the inferior pole — 28.6±14.6 mm. Superior pole of the right kidney approaches to OX axis on a distance of 5.5±1.9 mm, at the level of the hilum on 10.3±5.0 mm, the lower pole — 23.6±10.3 mm. The identical measurement of the left side showed that concerning the OX axis the superior pole is displaced on a distance of 16.6±7.7 mm, at the level of the hilum 21.3±6.3 mm, the inferior pole — 30.8±10.1 mm. In relation to the OY axis the left kidney at the level of the superior pole is displaced on a distance of 8.2±4.0 mm, at the level of the hilum on a distance of 13.5±7.2 mm, inferior pole — 31.8±12.3 mm. The vertical displacement of the kidney attracts attention: upward shift was found in 11 cases, and average displacement is on a distance of 11.5±5.9 mm; the downward shift was observed in 25 cases (17.2±8.4 mm on average).

Conclusions. Displacement of the left kidney at all levels was higher than the displacement of the right kidney.

MORPHOLOGICAL CHANGES AFTER PLASTIC RECONSTRUCTION OF THE PLEURAL CAVITY IN THE EXPERIMENT

Liashchenko S. N., Vasyukov M. N., Vasyukov A. M., Filippov M. V., Karasartov T. S.

Orenburg State Medical University, Orenburg, Russia
serglyashenko@mail.ru

Key words: *pleural cavity, anatomy, postpneumonectomy*

Aim. The aim of the study is early prevention of a postpneumonectomy syndrome in experiment.

Material and Methods. During the first series of the experiment the left pneumonectomy was conducted in 5 chinchilla rabbits. In the second series of experiments the plastic reconstruction of 1/3 volume of postpneumonectomy cavity was made in 5 animals. During the third series of experiments the plastic reconstruction of 2/3 volume of postpneumonectomy cavity in 5 rabbits was executed. In the postoperative period CT-scan control was carried out at 30, 90, 180 days. The animals were euthanized on 180 day. Lungs were studied using microscopic sections and histotopograms stained with hematoxylin-eosine and picrofuksin.

Results and Discussion. In the postoperative period after the left pneumonectomy at the level of Th_6 the right lung was twice enlarged in a lateral size (30.6±4.7 mm on average), the area of the lung was 1.5 times enlarged from 1141±132 to 1756±167 mm^2. After the plastic reconstruction the area of the lung is enlarged 1.3 and 1.2 times. Histotopograms showed the enlargement of lung airness with a large number of hyperinflated air-cell. Microscopic sections showed that acini had flattened shape, some acini had the destroyed wall and were merged in microcavities of 500–1500 microns in size. In case of plastic reconstruction of the cavity after the removal of the lung mediastinum organs and structures are not displaced, the lung is stretched moderately. On histotopograms the lung structure differs slightly from the norm, microcavities of 150–250 microns in size are located evenly in the central and peripheral parts of the lung. Difference between the second and third experimental series is the high enlargement of a heart segment of the right lung in case of the plastic reconstruction of 1/3 volume of postpneumonectomy cavity. Histological sections showed enlarged acinuses, destruction of acinus's wall is occasional.

GASTRO-ESOPHAGEAL LACERATION SYNDROME (MELLORI—WEESS)

Maleev Yu. V., Litovkina T. E.

N. N. Burdenko Voronezh State Medical University, Voronezh, Russia
ymaleev10@yandex.ru

Key words: *discontinuous hemorrhagic syndrome, Mallory-Weiss syndrome (MWS)*

Background. The proportion of patients with Mallory—Weiss syndrome (MWS) accounts for about 13–17% of all gastrointestinal bleeding.

Aim. To study the gender and morphological features of the course of the MWS.

Material and Methods. The analysis of 102 patients treated with MWS was carried out.

Results and Discussion. Localization of the defect (102 patients): on the right defect was present in 39 (38.1%) patients; behind — in 35 (34.1%); on the left — in 13 (12.5%); in the front — in 16 (15.3%). More often the gap was located on the back and right wall 74 (72.2%). Topographical and anatomical features of the esophageal-gastric transition (PJP) are of decisive importance in the development of MWS. The greatest thickness and strength of the wall is noted in the front sector, which is adjacent to the weakest left. 51% of patients are unemployed. Abuse of alcohol in persons of this group is the main factor of the disease. In persons over 60 years of age, it occurs in 17.6%.

Conclusions. The localization of ruptures in MWS is due to the peculiarities of the morphological structure of the PJP: their preferential location in the right and posterior sectors is determined by the lower density of tissues in these sections and the presence of a fixing ligamentous apparatus.

A high percentage of unemployed patients suggests an antisocial image of their lives and alcohol abuse. Alcohol intoxication and determines the mechanism of occurrence of ruptures, the course of pathology and the development of possible complications.

THE PRE-ORGAN SEPARATION OF THE BLOOD AND ITS ROLE IN THE DEVELOPMENT OF THE FUNCTIONAL HYPEREMIA OF THE MYOCARDIUM

Markov I. I., Malykhina T. V.

Private Medical University REAVIZ, Samara, Russia
morpholetter@yandex.ru

Key words: *myocardium, working hyperemia, blood separation*

Background. The continued increase of the mortality from the ischemic disease of the heart indicates that it has become the most unreliable organ in human. The situation is aggravated by the fact that until now many questions about the regulation of blood-lymph circulation in the intact heart remain either controversial or unresolved. First of all, this concerns the mechanism of development of functional (working) hyperemia of the myocardium.

Aim. The purpose of this study is the morphological and functional substantiation of the concept about the significance of pre-organ blood separation in the mechanism of development of functional myocardial hyperemia.

Material and Methods. The investigation was performed on inbred seven cats and inbred five dogs in full accordance with Russian and International ethical principles. The blood and lymph channel of the heart was studied by the intravascular methods of Grant and Ranier-Goyer in the supravital conditions. The movement of the ultrafiltrate of blood plasma in the interstitial space and its resorption in the lymphatic vessels was studied by using the vitally coloring dyes (1% solution of the hematoxylin and 0.25% solution of the silver nitrate), which to allow to reveal of the local features of the vascular permeability.

Results and Discussion. The morphological and functional data obtained in this study may serve as the grounding for a new conception about the role of the pre-organ separation of the blood in the development of functional hyperemia of the myocardium.

A NEW UNIVERSAL METHOD OF IMPREGNATING — NEW RESULTS IN MORPHOLOGY

Markov I. I., Markova V. I., Babaeva R. E.

Medical University REAVIZ, Samara, Russia, morpholetter@yandex.ru; Azerbaijan State Medical University, Baku, Republic of Azerbaijan, morpholetter@yandex.ru

Key words: *impregnation, argyrophility, nerve tissues, blood micro vessels*

Background. Methods of the impregnating of the nerve tissue and the walls of blood micro vessels which determined with solutions of silver salts, still remain empirical, little-informative, and give numerous artifacts.

Aim. The aim of this study is to develop and test a universal method of selective detection of argyrophilic structures in various organs and tissues.

Material and Methods. The investigation was carried out under etheric anesthesia on next experimental animals: on 5 inbred dogs, on inbred 7 cats and 17 white inbred laboratory rats. The first stage of the experiment was the preparatory procedure-perfusion into the bloodstream through the abdominal aorta of a 0.7% solution of salt of the silver nitrate $AgNO_3$ and 0.1% hydroquinone (the authorship certificate of USSR № 1619, 08/09/1990). The second stage was an increasing of the argyrophility of the wall of the blood micro vessels and surrounding tissues with barium hydroxide. The third stage was the impregnation of frozen sections with a thickness of 25.0–100.0 μm and an square of up to 10.0–15.0 cm^2, which was modified by the histological method of Bielschowsky—Gross.

Results and Discussion. The developed new method allows improving the quality and informativity of the impregnated preparations, the value and reliability of the results of histological studies. With using of this method new data have been obtained on the structural organization of the lymphatic vessels, and syncytial connections of neurocytes in the ganglia of the autonomous nervous system of the intestinal wall.

DISC HERNIATIONS AND CAUDA EQUINA COMPRESSION IN BILATERAL OSSEUS AND COMBINED FUSION LUMBOSACRAL TRANSITIONAL ANATOMY TYPES

Matveeva N.[1], Chabukovska R. J.[2], Papazova M.[1], Zhivadinovik J.[1], Zafirova B.[1], Chadikovska E.[1], Bojadzieva B.[1], Dodevski A.[1], Trpkovska B.[1]*

[1] Institute of Anatomy, Medical Faculty, University «Ss. Cyril and Methodius» Skopje, Republic of Macedonia;
[2] University Clinic of Surgery «St. Naum Ohridski» Skopje, Republic of Macedonia
* niki.matveeva@medf.ukim.edu.mk

Key words: *spine, lumbosacral transitional vertebra, MRI, disc herniation, cauda equina*

Background. The relationship between different lumbosacral transitional vertebra (LSTV) types, disc herniations and neural structures compromise has been sporadically reported.

Aim. To analyze disc herniations prevalence and distribution and to grade cauda equina compression in the LSTV types with osseus fusion of the last lumbar vertebra.

Material and Methods. A total of 75 patients (mean age 55.54±9 years) with lumbosacral radicu-