



cell infiltration are localized in the spinal muscle layer), multiple sites of necrosis are present. These are the most severe manifestations of atresia, the complete exhaustion of the compassionate mechanisms. Directly the areas of atresia represent the alternation of foci of fibrosis and necrosis, where it is difficult to assess the condition of any elements of the intestine. However, it is known that fibrosis and stenosis caused by it with the transition to complete atresia may be due to local ischemia and the resulting hypoxia. At a complete atresia a type in the segment of empty intestine increases the number of cells, especially in the lateral surfaces of the villi. The epithelium in the wall of the intestine is preserved, but the number of goblet cells increases. This is due to the increased functional activity of the epithelial cells, as well as their permeability, due to edema of the wall.

The shortening of villi takes place that are in some places are inclined in one direction and flattened while atresia with type of bands of fibrous tissue in the preatretic segment of the intestine. The lateral surfaces of the villi are covered with a large number of goblet cells, at the top of the villi the epithelium is exfoliated. In the area of atresia of the empty intestine, of the villi, there are significant dystrophic morphological changes that are characterized by complete degeneration of the muscular membrane, especially in the pivotal muscle layer, where a significant number of fibroblasts, lymphocytic and polymorphocyte infiltration are detected, that are characterized by multiple sites of necrosis. In places of atresia, the blood vessels are much dilated, adhesion of red blood cells to the vessel wall is observed. In the area of atresia of the empty intestine, the villi are shortened, crypts are enlarged, in many places the walls of the intestine of the epithelium is absent, the goblet cells are slightly enlarged. Lumen of the empty intestine is narrowed.

The wall is represented by focal shortened and deformed villi of the mucous layer with dystrophic changes in enterocytes, and an increase number of goblet cells. There is swelling of all layers of the wall, diffuse infiltration of the mucous membrane and submucosal layer with lymphocytes and plasmocytes, a significant increase in the proportion of fibrous tissue in the submucosal layer with focal sclerosis. There are no external and internal muscle layers and submucosal layer in the entire segment (and in the place) where the intestine ends blindly. There is a vaccine dystrophy of enterocytes, infiltration of the stroma of the villi and submucosal layers with lymphocytes, plasmocytes and focal hemorrhages.

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#### **VARIANT FEATURES OF BRANCHING OF THE LEFT GASTRIC ARTERY IN FETUSES AND HUMAN NEWBORNS**

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Expansion of possibilities and amount of surgical interventions on the stomach specifies the necessity of perfect study of variant features of the left gastric artery. Surgeons can face different variants of topography of this artery that makes them use special methods which help to provide success of the operating intervention in every individual case. Interest to the operative interventions on the stomach has grown considerably due to increasing of number of people in the world who suffer from considerable body weight and extremely need the operative correction of stomach sizes.

The aim of this work is to determine individual variability of the left gastric artery and its branching. This work became the result of researches analysis of 83 preparations of organocomplexes of the fetuses and human newborns after macropreparation.

Permanent discoveries of new variants of branching of the left gastric artery indicated that the research of this topic is relevant and requires forming of the convenient classification of them for practical application.

Blood supply of the stomach is carried out by the branches of the abdominal trunk. In most textbooks of anatomy typical branching of the abdominal trunk on three arteries is described: the left gastric, general hepatic and splenic. However, such branching is not always observed. In our preparations the left gastric artery was the branch of the abdominal trunk in 75 cases arising directly from the aorta in 5 cases and from the general hepatic artery in 3 cases.

The variants of the indicated artery are related not only to the place of its arising, but also to the topography. So, in 67 observations the left gastric artery approached to the cardiac part of the stomach and gave 2-3 oesophageal branches, after that it curved accurately and directed to its small curvature. In 14 preparations the basic branch approached to the proximal one third of the small curvature of the stomach. And only in 2 cases - below the level between its upper and middle one thirds. Not far from the small curvature of the stomach on 2,8-5,5 mm, the left gastric artery forms a bend, that is returned to the right and downward and then it passes between the sheets of the small omentum along small curvature ( in the distance 0,8-1,5 mm from the last one ) and, as a rule, divides into the anterior and posterior branches. According to the data of own researches and taking into account data from literature, it is possible to distinguish the following forms of branching of the left gastric artery in fetuses and human newborns: 1. Unicellular (5 observations)-the basic trunk becomes the same name right artery without a clear limit; 2. Bifurcation (76 preparations) – the artery was divided into two branches which passed to the front and back walls of the stomach; 3. Three-furcation (2 cases) – the left gastric artery having come to the small curvature of the stomach divided into 3 branches different in the diameter. One of them was anterior, another – posterior and the third one – posterior intramural. Improvement of data which are related to the variant anatomy of the vascular system of the stomach, in



particular, of the left gastric artery, contributes to the qualitative justification of tactics and techniques preference of operative intervention on the stomach.

At this time, the priority task is a comprehensive study of variant anatomy of the structures of arterial stream of the stomach and contiguous organs and systems including the fact that in practical surgery a doctor faces not separate structures variations but their combinations.

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**SPECTROPHOTOMETRY IN THE ULTRAVIOLET RANGE AS A METHOD OF TIME SINCE DEATH ESTIMATION**

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Time since death (TSD) estimation is an important and not completely resolved issues of forensic practice. The analysis of cerebrospinal fluid (CSF), as a stable and separated from the action of environmental medium factors, can be used for solving of this problem.

Purpose: to investigate the interconnections between the temporal changes of the spectral density of CSF samples and the TSD. Objects of investigation were liquid samples of CSF, taken in 30 corpses of both sexes aged 33 to 78 year with accurately known time of death which ranged from 1 to 6 hours (the main research group), and 20 healthy volunteers (comparison group). The selection of CSF was carried out by suboccipital puncture from great occipital tank of corpse and during spinal anesthesia performing for surgery preparation in healthy volunteers. In main group CSF was selected from cadavers who died because of cardiovascular disease. Spectral dependences of the post-mortem temporal changes in the optical density of samples of CSF in the ultraviolet spectrum of electromagnetic radiation in the range of wavelengths from 280 to 400 nm were studied. The choice of spectral range of wavelengths from 280 nm to 400 nm provides a separate possibility to study changes in the concentration of protein compounds under the influence of biochemical changes in the CSF of the deceased during various intervals after death. The analysis of the obtained results of spectrophotometric studies of the CSF protein fraction optical density in deceased has found the following: the spectral range from 280 nm to 310 nm is diagnostically sensitive to changes in the concentration of protein fraction for each value of the TSD; there is an individual dynamics of the spectral decrease of the CSF optical density in this band for each interval of the TSD; the optical density varies from 0.61 (280 nm) to 0.19 (310 nm) for TSD 2 hours; the optical density varies from 0.34 (280 nm) to 0.13 (310 nm) for TSD 4 hours; the optical density varies from 0.14 (280 nm) to 0.105 (310 nm) for TSD 6 hours. The change in the optical density of the protein fraction of the cerebrospinal fluid in the range of wavelengths from 280 to 310 nm is interrelated with the time since death. The spectrophotometric method is suitable for time since death diagnosing with an accuracy of 2 hours.

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**IMMUNOHISTOCHEMICAL EXAMINATION OF VIMENTIN IN ENDOTHELIOCYTES AND FIBROBLASTS OF THE PLACENTAL VILLI OF GRAVIDAS WITH IRON-DEFICIENCY ANEMIA**

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Disorders of the chorial placental tree formation very often underlie pathogenesis of this organ failure. The diagnostics of preterm maturation of the chorial tree is based on finding the fact of its preterm structure as compared to the parameters of a certain gestation period, which can be calculated on the percentage of various types of chorial villi.

The objective of our study was to investigate quantitative parameters of vimentin in endotheliocytes and fibroblasts of the chorionic villi by means of immunohistochemical examination of placenta with preterm maturation of the chorionic tree with iron-deficiency anemia of pregnancy in two different terms of gestation – 29-32 weeks and 33-36 weeks.

66 placentas were examined. The study design assumed isolation of two main groups of investigation of the above terms of gestation and two groups of comparison. Quantitative parameters of vimentin in the cytoplasm of endotheliocytes and fibroblasts of the placenta intermediate and terminal villi were considered on the basis of staining optic density measured by means of computer microdensitometry method.

Immunohistochemical staining on vimentin was determined in the cytoplasm of endotheliocytes and fibroblasts of the placenta intermediate and terminal villi in all the groups of the study. Vimentin concentration (optic density of immunohistochemical staining) in the cytoplasm of endotheliocytes and fibroblasts of the placenta intermediate and terminal villi was found to be a criterion to determine maturation of the placenta chorionic tree. Iron-deficiency anemia paradoxically causes immaturity of endotheliocytes and fibroblasts of the placenta intermediate and terminal villi even in those placentas where preterm maturation of the chorionic tree is determined.