According to the conducted study, from 4 to 12 weeks of prenatal development, the formation of brain structures, and especially the ventricular system, occurs intensively. At the 8th week in fetuses, the lateral ventricles of the brain correspond to the lobes of the hemispheres and area bean-shaped, elongated in the anteroposterior direction with an interception in the central part. In each of them, one can distinguish the anterior horn, central part, posterior and lower horns. The shape of the third ventricle approaches a rhombus, but there is a sharp elongation of it in length compared to its growth in width. In the anterior horn, the anterosuperior surface of the anterior horn is formed by laying the frontal part of the radiance and the genu of the corpus callosum. The inferolateral wall of the anterior horn is represented by the medial surface of the head of the caudate nucleus, protruding into the cavity of the anterior horn. The medial wall is formed by a thin plate of a septum pellucidum. On a horizontal section the cavity of the anterior horn of the lateral ventricle has a shape close to a circle. The central part of the lateral ventricle is extended in the anteroposterior direction parallel to the median plane. In the central part, the upper wall is formed by the parietal part of the radiance of the corpus callosum. The bottom of the central part of the lateral ventricle is formed: laterall body of the caudate nucleus, medially located by the terminal stria and the dorsal surface of the optic tubercle. The medial border of the central part of the lateral ventricle is the body of the fornix. On the frontal section, the central part of the lateral ventricle has the shape of an oval. The posterior horn of the lateral ventricle has medial, lateral and dorsal walls. The external and upper walls of the posterior horn are formed by part of the fibers of the corpus callosum.

The cavity of the posterior horn of the lateral ventricle on the frontal section has a circle shape. At the end of the 2nd month of development, a protrusion appears on the inner surface of the intensively growing anterior cerebral vesicles, from which the choroid plexus of the lateral and third ventricles will subsequently develop.

So, the intensity of development of the cavities and structures of the brain in the early period of ontogenesis is very high. The lateral and third ventricles are dilated, which indicates the presence of physiological hydrocephalus during the fourth month of intrauterine life, due to the accumulation of cerebrospinal fluid in the closed ventricular system.

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TOPOGRAPHY OF THE PHARYNX IN THE FETUSES OF THE SIXTH WEEK OF HUMAN ONTOGENESIS

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In embryos of 9.2–10.6 mm parietal-coccygeal length PCL - the beginning of the sixth week of fetal development, the longitudinal size of the rudiment of the pharynx reaches 363-372 μm, the width of the lumen on the sagittal section is on average 122 μm. The entire primary oral cavity is occupied by a bulky tongue, in which you can easily distinguish the lateral rolls and the odd middle tubercle, at the merger of which the tongue is formed.

The pharyngeal openings of the auditory tubes are funnel-shaped, up to 4.7-5.2 μm in diameter.

In the caudal part of the anterior wall of the pharynx, at the point of departure of the tracheopulmonary rudiment, there is a thickening of the mesenchyme in the form of scoop and transverse rolls, which delimit the entrance to the respiratory tube. Thus begins the process of formation of the larynx and the associated differentiation of the laryngeal part of the pharynx, and therefore, we can talk about the emergence of a fairly clear boundary between the oral and laryngeal parts of the body.

The lumen of the pharynx is lined with a two-layer cylindrical epithelium. In the embryo of 10.6 mm PCL, the height of the cells increases and reaches 11–14 μm. The nuclei of epithelial cells are still located at different levels.

In the areas adjacent to the epithelial layer of the pharynx, the cells of the mesenchyme are located more compactly than in its peripheral parts, where they merge without a sharp border with

the mesenchyme of adjacent organs. The thickness of this more compact mesenchymal layer reaches an average of 19-22 microns. The nuclei of mesenchymal cells are oval in shape and located at different levels.

Dorsal to the rudiment of the pharynx is the spine, separated from it by a small layer of mesenchyme 17-20 microns thick, ventrally - the rudiment of the larynx, behind the pharynx is the main artery, and ventrolateral - between the pharynx and the rudiment of the respiratory system - the vascular bundle of the neck. The vagus nerve is massive, its diameter is almost equal to the diameter of the intestinal tube. After the formation of the rudiments of various organs from the pharyngeal mesenchyme begins to form loose connective tissue that surrounds blood vessels and nerves. In the embryonic period of development of vessels and nerves, gradually shift more medially, thereby getting closer to a lateral wall of a throat.

So, in the study of a series of histological sections of embryos 12.0–13.8 mm PCL (end of the sixth week of fetal development) and plastic wax reconstruction model of the primary oral cavity and nose of the embryo 14.0 mm PCL, it was found that the length of the pharynx is 443-475 μm. The width of the lumen is on average 62 μm. Moreover, the shape of the lumen throughout is not the same due to the further development of the tongue and the larynx.

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POLARIZATION MICROSCOPIC TOMOGRAPHY OF THE PROTEIN STRUCTURE OF VITREOUS BODY PREPARATIONS IN THE DIAGNOSIS OF THE TIME SINCE DEATH

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Throughout the history of forensic medicine, determining of the time since death (TSD) has been one of the most frequently and carefully studied issues. The importance of accurately defining TSD in the context of medical and legal investigation of death cannot be underestimated, as the comprehensive data obtained allow investigative bodies to establish the time and circumstances of the events preceding death, identify suspects or deny involvement in the crime. However, despite the extreme importance, forensic experts often answer the question of the assessment of TSD with insufficient accuracy. This phenomenon occurs due to some limitations in the application of most modern scientific methods, as well as the influence of many environmental factors and the internal state of the victim's body.

The aim of the work is to develop a set of new forensic objective criteria for accurate establishment of TSD over a long period of time after death according to microscopic polarization tomography by statistical and wavelet analysis of the temporal dynamics of changes in the protein structure of the vitreous body (VB).

Vitreous body was taken from the anterior chamber of the eye from 30 corpses with a previously known time of death from 1 to 48 hours; the fence interval was 1, 4, 8, 12, 18, 24, 36 and 48 hours. The cause of death was cardiovascular pathology. Subsequently, VB smears were irradiated with helium-neon laser. The coordinate distributions of the polarization intensity of laser images of human VB in the plane of the photosensitive plate of the CCD camera were measured. Then statistical and wavelet analysis of the results was performed.

Results. **C**oordinate distributions of the circular birefringence (CB) of the optically active protein fraction of the VB layer of the deceased with TSD 12 h. were found to be characterized by a smaller mean value (SM_1=0,36) and a scatter range (SM_2=0,22), and a larger value of asymmetry (SM_3=0.62) and excess (SM_4=0,91) random values of the histogram compared to similar values statistical parameters (SM_1=0,53; SM_2=0,32; SM_3=0,39; SM_4=0,59), which characterize the coordinate distributions of the value of CB for VB samples with TSD 3 h. The obtained results illustrate the necrotic destruction of VB proteins with increasing TSD. Thus, the sensitivity range of the method of microscopic polarization tomography by statistical analysis of maps and histograms of the distributions of random values of CB of the protein fraction of the VB layers was 24 hours with the accuracy of setting the TSD within 25 minutes.