rich in blood vessels, most of which are located mainly along the lateral margins. Epithelial plate forms a series of wrinkles, which are elongated in the sagittal direction. Medial wrinkles are significantly lower than the lateral. Their structure is more complex due to their branching into smaller, secondary wrinkles.

At the beginning of the 14th week the length of ventricle is 6,7 ± 0,93 mm, width - 3,3 ± 0,69 mm. At this stage the external surface of the roof is flat, and the internal one has a complex relief because it has a lot of wrinkles. The tops of wrinkles are covered with hills, which are the most pronounced in the posterior part of the roof. A few wrinkles have a common base and their free end is thickened.

After 15 weeks the length of the third ventricle reaches 7,1 ± 1,27 mm, width - 3,6 ± 0,51 mm. The length of the roof plate reaches 18,0 = 2,52 mm, width of anterior part - 3,7 ± 0,59 mm and the posterior one - 1,5 ± 0,22 mm. The total thickness of the roof is 0,06 ± 0,06 mm. In the anterior roof lines cover the entire inner surface of epithelial plate, the thickness of which reaches 14,0 ± 2,1 mm. At this stage of the size of the hypothalamus is increasing. The zone of matrix almost disappears. It turns into a narrow strip, which is located along the wall of the third ventricle. Migratory layer loses its isolation and spreads laterally. Hypothalamic nuclei are isolated and lose connection with each other and the matrix.

In fetuses after 16 weeks of embryonic development the length of the third ventricle reaches 7,5 ± 1,42 mm, width - 3,8 ± 0,68 mm. The roof of the diencephalon is sharply bent outward. Wrinkles cover the entire inner surface of the roof.

Thus, during the fourth month of embryonic development the configuration of the third ventricle of the brain remains diamond-shaped. Its length increases from 6.2 mm to 7.5 mm, and width - from 2.45 mm to 3.8 mm. The size of the roof plate of the diencephalon changes. During these four weeks the length of the roof of the third ventricle increases further. The structure of the vascular plexus becomes much more complicated.

Therefore, starting from the fourth month the third ventricle gradually takes the shape complex inherent to a newborn ventricle.

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IMMUNOHISTOCHEMICAL VIMENTIN CONCENTRATION IN THE ENDOTHELIUM OF THE TERMINAL CHORIONIC VILLI IN THE ASPECT OF VARIOUS FORMS OF PLACENTAL INSUFFICIENCY

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We have studied 94 placentae in different forms of placental insufficiency (including 30 placentae with fetoplacental form, 34 placentae with placental form, 30 placentae with uteroplacental form) and 32 placentae in physiological pregnancy. The birth term was 37-40 weeks. Placental insufficiency (PI) and its form were established according to the list of the criteria (Milovanov A.P., 1998). The material was fixed in 10% buffered neutral formalin solution for 24 hours, then dehydrated in the ascending battery of alcohols and embedded in paraffin. On histological sections of standard thickness of 5 μm after dewaxing immunohistochemical technique with primary antibodies against vimentin was performed, a visualization technique was carried out using a peroxidase label and diaminobenzidine. The cellular nuclei were stained with Grot hematoxylin. A digital copy of the image was received with a microscope Delta Optical Evolution 100 (planachromatic lenses) and a digital camera Olympus SP-550UZ. The digital images were analyzed by means of the specialized for histological studies, computer program ImageJ (1.48 v, free license, W. Rasband, National Institute of Health, USA, 2015), in particular, the optical density of staining (range from "0" to "1") based on the logarithmic transformation of the values of brightness (gradations from "0" to "255" was evaluated. The optical density served as a measure of vimentin immunohistochemical concentration. For optical density arithmetic mean and its error were calculated, the samples were screened for normality of distribution by the criterion of Shapiro-Wilk, comparison between study groups was performed according to the odd double-sided student's t-test (computer program PAST 3.06, free license, O. Hammer, 2015). Terminal chorionoc villi were identified by the list of criteria (Davidenko I. , Tuleneva O. study guide).

A visual study of terminal chorionic villi showed that the specific staining for vimentin oil took place in the endothelium of capillaries and fibroblasts in the stroma of the villi.

In physiological pregnancy, the optical density of staining in the endothelium of the capillaries of terminal chorionic villi was 0,308±0,0018 in units of optical density, in fetoplacental form (PI) 0,274±0,0019 in units of optical density, (the significance of the difference with physiological pregnancy $P<0.001$, significant difference with fetoplacental form of PI is insignificant - $P>0.05$), in uteroplacental form of PI 0,290±0,0016 in units of optical density, the significance of the difference with physiological pregnancy $P<0.001$, significant difference with fetoplacental form of PI - $P<0,001$, significant difference with uteroplacental form of PI - $P=0,002$).

Therefore, all forms of PI are characterized by a decrease of vimentin immunohistochemical concentration in the endothelium of the capillaries of the chorionic villi compared to physiological pregnancy. However, the most significant reduction occurs in fetoplacental and placental forms of PI. The facts allow to include the determination of vimentin immunohistochemical concentration in the perspective criteria for differential diagnostics of uteroplacental form of placental insufficiency.