



In order to determine the shape of the skull and its facial profile, the skulls of 35 adult cadavers aged from 22 to 60 years, without signs of mechanical damage and anomalies of the skeletal system were used as a research material. To study the asymmetry of the viscerocranium and the degree of its severity a "fan-shaped method" of morphometry was used [I. Haivoronsky, E. Dubovik, 2009]. The width-height parameters of viscerocranium were studied by the craniometry method, with the help of thickness caliper with millimeter scale graduations and technical trammels. To determine the spatial coordinates with by stereotopometry method, the craniostereobasiometer was used, the coordinates of craniometric points accurate within 0.05 mm according to their projection on the sagittal, frontal and Frankfurt planes were determined. The identification of patterns of relative shapes of the skull and facial profile in its basilar craniotypes was based on the conducted studies.

Thus, the mesoprosopic shape of the facial skull in half of the cases was observed in platibasylar (50.0%), - in medio- (44.5%) and flexibasylar craniotypes (40.0%). Leptoprosopic shape of facial skull was seen in 1/3 cases - in mediobasylar craniotype (33.2%), more often - in flexibasylar (40.0%) and the least - in platibasylar (23.0%).

The orthognathic facial profile shape was often seen in flexibasylar craniotypes (84.0%) and in 2/3 cases of mediobasylar (77.0%) and the least - in platibasylar (68.6%). Mesognathic shape of facial profile in 1/3 cases was defined in platibasylar craniotype (18.4%), and the least - in mediobasylar (11.1%) and in rare cases – flexibasylar craniotype (44.0%).

Prognathic shape of facial profile was observed in flexibasylar craniotype (10.0%) and in some cases - in medio-and platibasylar (less than 3.8%).

The study led to the conclusion that the correlation of the sizes of the facial skull such as distances from the point nasion to the point at the lateral edges of the piriform opening, the distance from the point nasion and the lowest point of the piriform opening allow to create mathematical models of the most important dimensions of facial skull.

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ECTOPIC PREGNANCY NOWADAYS: PATHOMORPHOLOGICAL RESEARCH

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In ectopic pregnancy the embryonic implantation occurs outside the uterus most commonly in the fallopian tube. Ectopic pregnancy is a medical emergency, if not treated in time can lead to fatal consequences. In normal pregnancy, the fertilized ovum enters the uterus through fallopian tube in uterine cavity and settles into the uterine mucosa where it has plenty of space for its growth and development. About 1% of all pregnancies are found to be in an ectopic location with implantation not occurring inside of the uterus. Of these ectopic pregnancies 98% occur in the fallopian tube. The incidence of ectopic pregnancy has markedly increased in the last decade.

The study was conducted on 20 patients aged between 28 to 40 and having ectopic pregnancy of 2-3 months of gestation. In addition to its presence, the location of corpus luteum was also considered. The excised part of the tissue was taken and fixed in 10% formalin solution and processed for light microscopy.

Ectopic pregnancy was found on the left side in 9 cases and on the right side in 11, but the corpus luteum was found in all cases by inspection. The lumen was found to be tortuous in eleven cases as compared to tubal lumen in the control tube removed in other benign surgical cases. All the tubes showed evidence of trophoblastic proliferation invading maternal tissues resulting in extravasation of a significant amount of maternal blood. The orientation of implantation with reference to the major blood vessel appeared to be random. On microscopic examination of the slides the predominant pattern of spread of trophoblast and hemorrhage could be classified as predominantly intraluminal, predominantly extraluminal or combined. The maternal blood vessels were invaded by trophoblast soon after initial implantation. In the majority of cases the tube was not ruptured and the blood often leaked out of abdomina ostium of the fallopian tube after filling the lumen.

The present study provided opportunity to extend some valuable information regarding tubal pregnancy, its mode of occurrence and mechanism of invasion and infiltration of the tubal wall. The mechanism of implantation is considered to be the following: the ovum is picked up by the fimbriated end of fallopian tube which is held in close contact with ovary by the fimbria ovarica which sweeps across the surface of the ovary during ovulation.

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MORPHOLOGY OF THE THIRD VENTRICLE DURING 16-20TH WEEKS OF PRENATAL PERIOD OF HUMAN ONTOGENESIS

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The aim of our study was to examine the peculiarity of the formation of the third ventricle in different ontogenetic periods. Studies of the morphology of the walls of the third ventricle were conducted on 15 human cadavers by methods of histology, dissection and morphometry.

Most of the structures of the third ventricle are present at the 13th week of fetal development. The form of cavity is diamond. Its length is $6,2 \pm 0,58$ mm, width - $2,45 \pm 0,25$ mm. The roof consists of the medullar and mesenchymal layers. The depth of the epithelial plate is $8,0 \pm 1,68$ mm. The mesenchymal layer of roof is thinner. It is



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 $6,7 \pm 0,93$ mm, width - $3,3 \pm 0,69$ 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 $7,1 \pm 1,27$ mm, width - $3,6 \pm 0,51$ mm. The length of the roof plate reaches $18,0 = 2,52$ mm, width of anterior part - $3,7 \pm 0,59$ mm and the posterior one - $1,5 \pm 0,22$ mm. The total thickness of the roof is $0,06 \pm 0,06$ mm. In the anterior roof lines cover the entire inner surface of epithelial plate, the thickness of which reaches $14,0 \pm 2,1$ 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 $7,5 \pm 1,42$ mm, width - $3,8 \pm 0,68$ 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 μ m 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 chorionic villi were identified by the list of criteria (Davydenko 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 $0,308 \pm 0,0018$ in units of optical density, in fetoplacental form (PI) $0,274 \pm 0,0019$ 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 $0,290 \pm 0,0016$ 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.