



Examination of the majority of histological sections of the human embryos found that branches of the abdominal aorta, the abdominal trunk in particular, superior and inferior mesenteric arteries, were formed from the aortal wall in the form of bulging. At this stage of development three branches arise from the descending part of the aorta – unpaired visceral and paired visceral and parietal ones. The vitelline arteries belong to the germs of the paired branches, because the vitelline-mesenteric artery further develops from them. After the vitelline sac is reduced the vitelline-mesenteric artery is transformed into the superior mesenteric artery.

During V-VII weeks of development the ventral branches are transformed with the following formation of the abdominal trunk, superior and inferior mesenteric arteries, that is, the vessels peculiar for the adult organism.

The length of the abdominal aorta on our specimens of III-V month fetuses was on an average 22,4-27,8 mm, of VI-VII month fetuses – 33,6-37,5 cm, of VIII-IX months – 40,7-51,2 cm, and of X month – 56,4-65,5 cm. The longitudinal aortal axis is located to the left from the midline.

Special attention in our studies was paid to the relation between an average length of the abdominal aorta and the body of fetuses 167,0-388,0 mm of PCL – it was 8,2%.

Examination of the human fetuses and neonates found that bifurcation level of the aorta in fetuses was determined on the level of III-IV transversal cartilages, and in neonates it was more often found on the level of the inferior margin of IV or middle of V transverse vertebrae. Though, on the specimens of the fetuses 458,0 mm PCL and neonate 517,0 mm PCL, bifurcation of the aorta was found on the level of the inferior margin of II transversal vertebra.

Considering our own studies and literature data, the aorta can be divided into the three types depending on the level of bifurcation: 1st high – division level within L2; 2nd middle – division level within L3 - L4; 3rd low level – lower the cartilage between L4 - L5.

Examination of the bifurcation angle of the aorta enabled us to conclude that the lower bifurcation level is the larger is the angle, and on the contrary, the higher the level, the smaller the branching angle is. Bifurcation angle of the aorta in fetuses and neonates ranges within 27° to 39°.

The upper margin of the aorta on the majority of specimens was relatively stable on the level of XI-XII thoracic vertebrae. A marked fascial compartment formed by circular oriented fibers with relatively thick perivascular cellular tissue was found around the aorta. It should be noted that in all the cases a clearly marked fissure was detected between the aortal wall and fascial compartment. Considering the above, a relative stability of the superior margin of the aorta fixed to the diaphragm by this fascial compartment can be explained.

To our mind, the results of the study will supplement the existing literature data concerning topography of the aorta and its unpaired and paired visceral and parietal branches in embryos, pre-fetuses, fetuses and neonates. They will form the basis for antenatal prevention of normal embryogenesis disorders.

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**PROLIFERATIVE PROCESSES IN CASE OF PRETERM MATURATION OF THE
PLACENTAL CHORIONIC TREE AND IRON DEFICIENCY OF PREGNANCY
IN 33-36 WEEKS**

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Nowadays the influence of iron-deficiency anemia of the gravidas (IDAG) upon the morphology of preterm maturing of the choroid tree is not studied. There are certain non-systematized observations of an opposite condition available – choroid tree immaturity in case of IDAG. Investigation of the regulation processes concerning the number of cells is essential to specify the mechanisms of preterm maturation of the chorionic placental tree and preterm labour that was carried out for the first time in case of IDAG. The diagnosis of preterm maturing of the chorionic 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 choroid villi. Preterm maturing of the chorionic tree is found during preterm labour.



Objective of the work was to improve morphological diagnostics of preterm maturation of the placental choroid tree with IDAG during 33-36 weeks of gestation. Material and methods: 63 placentas were examined. The following groups of the study were formed: the main group №1 – the examination of combined IDAG and preterm maturing of the choroid tree in 33-36 weeks of gestation, (n=20). The comparison group №2 – the examination of preterm maturing of the choroid tree without any anemia in labour in 33-36 weeks of gestation, (n=22). The group №3 - physiological pregnancy (37 - 40 weeks of gestation), (n=21).

The placental tissue was preserved in phosphate buffered neutral 10% formalin solution with further passing the material and preparing paraffin blocks. By means of a sliding microtome the cuts were made 5 micrometers thick keeping to appropriate requirements. Histological examinations were conducted on the base of histological samples stained with hematoxylin and eosin. In every placenta in random fields of vision for 400 choroid villi were studied and classified according to the criteria. According to DAKO recommendations by means of immunohistochemical method further detection of antigen Ki-67 expression in nucleus of trophoblast structures was determined (polymeric system of detection with the stain diaminobenzidine). The number of Ki-67-positive nuclei was calculated in per mille. Statistically significant were differences with $p \leq 0,05$. The results are presented in table.

Table

Groups	Number of examined placentas	Ki-67-positive nuclei (‰)
33-36 weeks of gestation		
The main group №1 – the examination of combined IDAG and preterm maturing of the chorial tree	20	54±1,3 p2<0,001 p3<0,001
The comparison group №2 – the examination of preterm maturing of the choroid tree without any anemia	22	24±1,0 P3<0,001
37 - 40 weeks of gestation		
The group №3 - physiological pregnancy	21	3±0,1

Note. P2 – odd probability of the mean values between the main group №1 and the comparison group №2. P3 – odd probability of the mean values between the main group №1 (or comparison group №2) and group №3.

Preterm maturation of the chorionic tree and iron deficiency anemia of pregnancy both separately and in their combination result in intensification of proliferation processes in the placental chorionic villous trophoblast.

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PROLIFERATION ACTIVITY OF TROPHOBLAST OF THE PLACENTA CHORIONIC VILLI IN CASE OF INFLAMMATION WITH UNDERLYING IRON DEFICIENCY ANEMIA OF PREGNANT WOMEN

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Many scientific studies deal with the issues of inflammation of manure and iron deficiency anemia of pregnant women, due to the high frequency of these conditions. However, it is important to investigate their interaction, in order to expand and supplement the information base of the pathomorphology of placental insufficiency, which is a common morphological manifestation for these conditions. At this stage we will try to study the immunohistochemical features of the proliferation processes of the trophoblast of the placenta chorionic villi in case of chronic basal deciduitis of pregnant women with iron deficiency anemia.

82 placentas were selected for immunohistochemical examination. The distribution by groups is presented in the table. The material was preserved for 20-22 hours in a buffered neutral 10% formalin solution, followed by dehydration in an ascending battery of alcohols and casting in paraffin at 56°C. Monoclonal antibodies to Ki-67 protein with streptavidin-biotin imaging using the LSAB kit were used for the procedure. The number of Ki-67-positive nuclei of the trophoblast of