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THE DEVELOPMENT OF LIVER IN THE PREFETAL PERIOD OF HUMAN ONTOGENESIS

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The characteristics of the liver in fetal period of human ontogenesis were studied on the basis of 20 human prefetal specimens by means of morphological methods.

The size of the liver was found to be significantly increased, its transverse dimension was already 5.0 mm at the beginning of the prefetal period (prefetal 14.0 - 20.0 mm of crown-rump length (CRL)). The right and left sagittal fissures are clearly defined on the visceral surface of the liver in seventh week prefetuses. The gallbladder lies in the right anterior sagittal sulcus; the umbilical vein is in the right anterior sagittal sulcus. The development of the liver during the eighth week of prenatal development was studied on the basis of 10 series of histological sections of human prefetuses (21.0 mm to 30.0 mm CRL). The liver was detected to continue its enlargement, the transverse dimension in the correspondent group of the prefetuses was 6.0 mm. The hepatic-duodenal ligament runs from the gate of the liver to the upper part of the duodenum and pancreatic head. The hepatic artery and the bile ducts are located inside of the ligament. The portal vein of the liver lies to the left of the bile duct and slightly behind the hepatic artery.

Morphogenesis of the liver during the ninth week of fetal development was studied on the basis of 6 series of histological sections of human prefetuses (31.0 mm to 41.0 mm CRL). The liver occupies superior and middle floors of the abdominal cavity in prefetuses of this age group, the transverse size of the liver is 3.5 mm, longitudinal size - 7.0 mm. The proper hepatic artery lies to the left of the common bile duct in the gate of the liver. The portal vein of the liver passes behind and slightly below the proper hepatic artery.

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STRUCTURAL PECULIARITIES OF THE MAXILLA AND ITS SURFACES IN THE PERINATAL PERIOD OF ONTOGENESIS

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The position of the maxilla in the structure of the facial skeleton, its role in the formation of the facial profile and adjoining osseous structures create a certain originality in its shape. Congenital clefts of the upper lip and palate are not often a part of this or that syndrome, but as an independent congenital disease in the form of an isolated developmental defect of separate organs.

The purpose of our study was to detect and systematize peculiarities of the development and structure of the maxilla and its body in the perinatal period of ontogenesis.

The study was conducted on 53 dead 4-10-month fetuses and 11 newborns (5 isolated organ complexes in particular) of both sexes without external signs of anatomical defects or abnormalities and without vivid macroscopic deviations from the normal structure of the skull. Before the beginning of the craniometric examination every specimen was fixed in craniostat in the horizontal auricular-ocular plane, in so-called "Frankfurt horizontal line". All the measurements on the skulls were made by means of a tape measure, caliper, slide compasses and dial calipers.

A typical shape of the maxilla during the perinatal period is short and wide, found in early fetuses (4-5 month) – in 94% of cases, in fetuses of 6-7 month of age – in 82% and in fetuses of 8-10 month of age (late fetuses) – in 68% and newborns. A short and wide shape of the maxilla changes into a high and narrow one with age.

The absence of the zygomatic-cellular crest is a characteristic sign of the fetuses of all the age groups and newborns. With the age of fetuses the relief of the anterior surface of the maxilla changes. Thus, a flat anterior surface of the maxilla is found in 4-month fetuses, it changes into a little concave one in the area of the infraorbital opening in 5-month fetuses. In 6-7-month fetuses the surface is more concaved passing from the base of the frontal process to the infraorbital opening. In 8-10-month fetuses and newborns a deep concavity is found near the cellular process from the nasal incisures to infraorbital opening. In the perinatal period of ontogenesis the height of the anterior surface increases by 2,3 times, and the length – by 2,1 times as much. The height and length of the anterior surface of the maxilla increases most intensively in 8-10-month fetuses and newborns, and the slowest – in 5-month of the intrauterine development.

A typical shape of the infraorbital opening is oval and round, and it is considered to be as a variant of it. During the perinatal period of ontogenesis the infraorbital opening is usually projected in the point of crossing of the line connecting the lateral angle of the eye with the nasal wing and the line passing from the median angle of the eye to the angle of the mouth. In early (4-5-month) fetuses this projection of the infraorbital opening is found in 70,6% – in the right and 64,7% – in the left, in 6-7-month fetuses in the right – in 75% and in the left – 80%, and in late fetuses (8-10-month) and newborns – in 74% and 77,7% respectively. A typical shape of the anterior surface of the maxilla for early fetuses is irregular trapeziform, and for 6-7 month, late fetuses and newborns - an elongated triangle shape. The ratio of the height of the anterior surface to the height of the infratemporal surface in the perinatal period is in an average 1:1 (1:1,03 – in 5-month fetuses and 1:1,25 – in 6-month fetuses), which is indicative of the similarity of the height sizes of these surfaces. The ratio of the length of the anterior surface of the maxillary body and the length of the infratemporal surface in the perinatal period ranges between 3,1:1 (in 4-month fetuses) and 4,2:1 (in 8-10-month fetuses), which is