mesenchyme, in which, in turn, local vascular formation occurs. These vessels form anastomoses between the larger vascular trunks.

At the end of 4 weeks of intrauterine development (embryos 5.0 - 6.0 mm in length), three anastomoses are formed between the yolk-mesenteric veins. The first (cranial) anastomosis is located inside the liver. The second (middle) anastomosis is located behind the intestine. The third (caudal) anastomosis is located in front of the intestine.

At the fifth week of embryonic development (embryos 7.0 - 8.0 mm in length), the portal vein trunk is formed from the remnants of the anastomoses that existed between the yolk-mesenteric veins. The unusual spiraling course of the portal vein in adults is due to the disappearance of the beginning of the left vessel, which is located cranial to the middle anastomosis and the beginning of the right canal, which is located caudal to the middle anastomosis.

The study of a series of histological preparations of embryos indicates that the vascular trunks, which are formed in the liver parenchyma, flow into the portal vein trunk, which is being formed. Such data has not been found previously in the literature.

So, a definite pattern in growth of the liver parenchyma, as well as in the formation of liver lobules, was not found. The structure of the liver is formed as a result of complex correlative relationships of the vessels of the liver, mesenchyme and cell strands.

Kryvetskyi I.V.

TOPOGRAPHICAL PECULIARITIES OF THE THORACIC SPINE OF THE SPINAL COLUMN IN THE FETUSES

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The urgency of the work is explained by the necessity of a complex study of the development peculiarities, topography formation of structures of the thoracic spine of the spinal column and dynamics of their syntopic correlation in the prenatal period of ontogenesis and in the newborns, that is of great significance for elucidation of the morphological preconditions and time of the possible origin of the congenital spinal defects with the object of the development of new, more rational methods of surgical interventions in this area, elaboration of new stabilization technologies and spinal column correction at disabling deformities of the spine in children and adolescents.

The aim is to ascertain chronological sequence of the development and formation of the topography structures of the thoracic part of the spinal column in the early period of human ontogenesis. The topographic and anatomical features of the relationships between the structures of the thoracic part of the spinal column from the moment of their laying to birth, dynamics of their formation and growth taking into account morphogenesis of the adjacent structures are established. With the help of the adequate morphological methods, investigation of morphogenesis and dynamics of spatial-time relationships of the thoracic spine of the spinal column of a person, their connections during the fetal period of the development and in the newborns from the point of view of the topographic-anatomical approach to embryogenesis problems was carried out. The features of the blood supply and venous outflow of the spine are ascertained. Critical periods, morphological preconditions and time of the possible origin of some innate defects of the spinal column were established. On the basis of the obtained results, the problem of prenatal diagnostics of the innate malformations of the thoracic part of the spinal column was solved.

The thoracic vertebrae laying occurs in the germs of 7.0-9.0 mm CRL by forming the condensation of sclerotome cells round the chord and the nervous tube, from which mesenchymal thoracic vertebrae are formed. The vertebral bodies are formed from the cranial and caudal parts of two adjacent sclerotome masses. Intersegmental arteries remain on the level of the vertebral bodies, and the spinal nerves lie between thoracic vertebrae. In the germs of 10.0-12.5 mm CRL the arches of the vertebrae move away from the bodies perpendicularly in the dorsal direction.

Thus, the formation of articular and transverse processes begin. At this early stage of the development there are no joints in the spinal column of the germs, the spinal canal forming begins.

Bodies are clearly defined from the thoracic vertebrae, and in the lumbar and sacral vertebrae only arches are clearly visible and closely spaced bodies. The vertebral bodies at this stage are well differentiated. All of them have the same, primitive, quadrilateral body shape and are separated from each other by a layer of mesenchyma. The layers correspond to the future intervertebral discs.

Kyshkan P.Ya.

EXAMPLE OF USING 3D MODELING DURING EXAMINATION OF ACUTE HEART INJURY

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Despite the fact that classical methods of acute trauma research are well studied and widely used in forensic medicine, in recent years in the world and domestic forensic practice have been increasingly introducing modern computer technology and three-dimensional spatial modeling, which significantly complement and improve visualization of bodily injuries, as well as increase the accuracy of identification of the arms causing injury.

Forensic identification of the stabbing-cutting tool found at the scene and seized by the investigating authorities, with the presence of stab wounds to the heart, using photogrammetry and 3D modeling of the wound canal in the heart muscle.

As the materials of the study barbed cutting tool and individual elements of the wound canal were used, which were examined using photogrammetry and subsequent 3D modeling for their compliance in the examination of acute heart injury.

An example of using the method of 3D modeling is given and its advantages in comparison with classical methods used in forensic practice during the examination of bodily injuries in the forensic identification of stabbing-cutting tools. Full compliance is shown when comparing the 3D model of a knife blade provided by investigators, its length, width at the site of the greatest thickening and bevel of the blade created by photogrammetry and three-dimensional spatial modeling with 3D models of fragments of the wound canal of stab-cut heart damage. The measurement results obtained from 3D models of fragments of the wound canal with the help of computer programs "Agisoft Photoscan" and "3ds max" are an order of magnitude more accurate than the measurements provided by classical methods.

The use of photogrammetry and modern 3D modeling technologies allows obtaining 3D models of the wound canal in the thickness of the heart muscle or any other parenchymal organ and stabbing-cutting tool, to make more accurate linear measurements and comparison of fragments of the wound canal with the probable injury tool compliance.

The electronic archive of 3D models will allow to save the parameters of damages in their original form, use them during additional, repeated or commission examinations, virtual expert experiment, as well as send by e-mail for remote consultation and investigative bodies and juries for use during court sessions.

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FETUSES ANATOMY OF THE PAROTID GLAND STRUCTURE

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Formation of the organs is a very complicated process which is not definitively studied nowadays. It is very important to study the structure of the organs and systems in association with the basic processes of morphogenesis on the basis of the findings of embryogenesis. The study of the development and forming of the topography of the parotid gland during the prenatal period human ontogenesis is of great importance for integral understanding of the structural – functional organization of the salivary apparatus and the oral cavity on the whole. The analysis of scientific literature dealing with the parotid gland anatomy is indicative of a fragmentariness and discrepancy of the data, pertaining to the syntopy and chronology of the topographic-anatomical changes during the fetal period of human ontogenesis.