vessel, also called the connecting branch, because it is the site of anastomosis between the portal vein of the liver and the umbilical vein.

In prefetus 18.0 mm CRL (mid-seventh week) along the branches of the portal vein of the liver, liver cells form thin bile ducts, and the latter are separated from the mesenchyme surrounding the portal vein of the liver, a well-defined slit, the width of which in preterm of this age group is 20 μm.

In 13 series of histological sections of the prefetus ranging in size from 21.0 mm to 30.0 mm CRL, it was found that the liver continues to increase in size, its transverse size in this group of amniotic fluid is 6.0 mm.

In the middle of the prefetal period (the ninth week of fetal development), the morphogenesis and topography of the structures we conduct our research on were studied in six series of preterm infants from 31.0 to 41.0 mm TCD.

The liver in the prefetus of this group continues to increase, occupies the upper and middle floors of the abdominal cavity, the transverse size of the organ is 35.0 mm, length - 7.0 mm.

In the middle of the prefetal period the width of the portal hepatic vein in the liver gate is greater than the width of the umbilical vein. Thus, in prefetus 35.0 mm CRL width of the portal hepatic vein is 300 μm, width of the umbilical vein - 250 μm.

At the end of the third month of prefetal development (prefetus 50.0 to 75.0 mm CRL) near the lower surface of the liver, the transverse size of the portal vein is 2.5 - 3.0 mm, umbilical vein - 2.0 - 5.0 mm. In the area of the gate of the organ, the portal vein of the liver with a short venous trunk (connecting branch) connects with the umbilical vein and then continues to the right lobe of the liver.

It should be noted that the diameter of the partial branches of the portal vein of the liver in this period slightly exceeds the diameter of the main trunk of the vessel and reaches 3.5 0 4.5 mm.

Kryvetskyi I.V.

ANATOMY 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.

IDENTIFICATION OF PIERCING-CUTTING OBJECTS OF INJURY WITH SPECIFIC PARAMETERS BY MEANS OF 3D RECONSTRUCTION OF THE WOUND CHANNEL

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The majority of lethal outcomes due to piercing-cutting injuries are associated with murders. A forensic expert always faces the problem of identification of a piercing-cutting object provoking injury. Examination of a wound channel is of considerable forensic value for identification of the shape of a blade and its specific peculiarities. From the practical point of view in order to identify the mechanism of injury and the object provoking trauma in addition to traditional methods introduction of up-to-date methods of three-dimensional spatial modeling into forensic medicine today has become more relevant and essential. These methods enable to quickly and accurately digitalize all the injuries available on a crime scene and considerably assist in making more objective expert's report. Digital technology provides storage of electron 3D models for unlimited time and in case of necessity repeated or additional investigations can be carried out. Moreover, these models can be used for presentations of digital documentary data base or demonstration of high-accuracy volumetric models of anatomical structures printed on 3D printers during sittings of the court and jury trial which pass a sentence.

In our previous researches the method of 3D-reconstruction of the wound channel formed by a piercing-cutting object with acute injury of the soft tissues and parenchymal organs was developed (Kyshkan et al., 2020). According to this method 3D modeling of the experimental wound channel was performed **(**Kyshkan et al., 2021). On the assumption of it, the issue concerning possible use of a three-dimensional spatial reconstruction of the wound channel caused by a piercing-cutting object with specific parameters to identify the instrument causing injury becomes reasonable.

To find possibilities to identify a piercing-cutting traumatic object with specific parameters by means of the use of up-to-date computer programs and methods of three-dimensional spatial reconstruction of bodily injuries in the space of graphics editor «3ds Max» on the basis of photogrammetric method.

The experimental and practical parts of our research were carried out with the use of our patented methods. Fifteen experimental wound channels were made by means of alginate impression mass with rubber-like effect «Hydrogum 5» (firm «Zhermack», Italy), which most accurately retains and reconstructs the properties of an experimental blade with a thickened tenon edge immersed into it. To make experimental injury a piercing-cutting object with specific parameters was used – a knife with one-sided sharpening of the blade and thickened tenon edge, its blade was 9.53 cm long, 2.7 cm wide in the point of its biggest thickening, and the tenon edge 0,42 cm thick. Every fragment of the wound channel was contrasted with a dye using 1% brilliant green alcohol solution. All the fragments of the wound channel were opened parallel to its length and were placed on a rotary table located in a light cube to provide adequate illumination and photos were taken. The digital camera SONY RX 10 II was used for shooting. The object of shooting was