



The research was carried out on corpses of newborns (455,0-500,0 мм PCL) by morphological methods: anthropometry, macromicropreparation, morphometry, injection of arterial vessels, histological method, statistical analysis.

It has been established that macroscopically on the internal surface of the sigmoid-rectal junction the fold of the mucous membrane is differentiated. In our opinion, this is due to the presence of O'Beirne-Pyrohov-Moutier's muscle locks at the level of the rectal-sigmoid angle. Therefore, the fold is of a semi-circle shape, located transversely to the axis of the intestine. The semi-ring can be located on any wall of the sigmoid-rectal junction, depending on the plane the curved sigmoid-rectal segment is.

Histologic investigations of the sigmoid-rectal junction determined that its wall is formed by mucous membrane, submucos, muscular and serous layers. The mucous membrane of this part opens into the lumen of the intestine. In the folds of the sigmoid-rectal junction crypt is determined, which is surrounded by lymphocytic aggregates and relief muscle layer. The mucous membrane of the sigmoid-rectal junction is covered by a single-layer prismatic epithelium.

Among the cryptic cell structure, columnar epitheliocytes with rim are visualized, although goblet cells predominate, with the number decreasing towards the rectum. A characteristic morphological feature of columnar epitheliocytes with a rim is a thinned brush border on their apical surface, formed by a large number of microvilli. With the approach to the estuary of the crypt, the microvilli of the apical surface lengthen and become more numerous. The own plate of the mucous membrane is formed by the loose fibrous connective tissue in which fibroblasts, macrophages, collagen and elastic fibers are located.

The muscular plate of the mucous membrane is represented by thinned circular and longitudinal layers, which are formed by smooth muscle cells. The submucosal basis of the sigmoid-rectal junction formed by the loose fibrous connective tissue contains a large number of vascular plexus. The muscular membrane of the sigmoid-rectal junction in newborns acquires a sphincter structure. It is formed by two layers of smooth muscle tissue, between which the layers of loose fibrous connective tissue are visualized. The thickness of the circular layer of the muscular tunic considerably predominates over the thickness of the longitudinal one. The serous membrane of the sigmoid-rectal junction is represented by the loose fibrous connective tissue with blood vessels covered with mesothelium.

Therefore, the macroscopic signs of the sigmoid-rectal segment in newborns should be considered as the presence of muscle O'Beirne-Pyrohov-Moutier's lock at the level of the rectal-sigmoid angle and transverse semicircular fold of the mucous membrane. The histological signs of the sphincter apparatus of the sigmoid-rectal junction are the presence of the concentration of blood vessels and thickening of the circular layer of the muscle membrane in the submucous and serous envelope.

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FIXATION OF FETUS OR NEWBORN CORPSES IN THE NORMAL ANATOMICAL POSITION FOR MORPHOLOGICAL STUDIES

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Ensuring the qualitative fixation of fetuses or newborns during embalming in the normal anatomical position is one of the urgent problems of applied morphology. This task is important for improving the process of manufacturing gross specimens of organ complexes, facilitating further description of their structure and topography. To be as informative as possible and to look natural, the specimen has to be straightened and secured properly at the preparatory stage.

Therefore, our aim was to create a model that can be used to preserve the sustainability of the specimen's shape during the fixation. The basis of our proposed utility model is the task of improving the existing fixations of fetus or newborn corpses in the normal anatomical position for their morphological study.

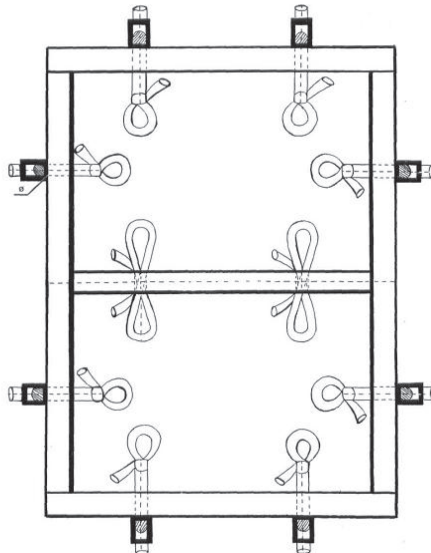
The prototype of the utility model that we proposed is the corpse fixator (Picaliuk V.P., Moroz H.A., Kutia S.A. Methodical manual on the manufacture of anatomical specimens.-Simferopol, 2004. - 76 pp.), which is a wooden board to which an anatomical specimen is attached in an horizontal position by means of metal pins and immersed in the embalming solution. However, in the process of practical application of the mentioned prototype, some drawbacks were found, in particular the impossibility to preserve the sustainability of the gross specimen's shape during the intermediate and final fixation, which impairs greatly its visibility and informativity. It should be also noted that the corrosion of metal pins used for attachment may result in the undesirable coloring phenomenon of the fixing solution and tissues of the preparation.

The common features of the utility model and prototype we are offering are the material of which the fixative is made: it is wood. However, the fundamental difference between them lies in the design of the fixator, which ensures the preservation of the constancy of the normal anatomical position of the specimen during the fixation and during the embalming. Thus, the fixator of fetus and newborn corpses in the normal anatomical position for the morphological study is characterized by the fact that the wooden frame is made in the form of a rectangular frame and a transverse bar, which is fastened in the middle to the side walls. The holes for the fixation system are located on the upper, lower and



lateral walls and on the transverse framework of the frame, and polychlorinated tubes mounted in the holes, form 12 hinges, which are regulated by 8 clamps from the systems for intravenous injection.

The utility model that we made was tested in the study of 20 corpses of human fetuses aged from 4 to 10 months of fetal development. Other 20 corpses of human fetuses of the same age were examined using a prototype. Unlike the prototype, when using our model the fetus corpses were in the normal anatomical position after embalming, they did not have traces of coloration due to metal corrosion of the pins, which facilitated the production of high-quality gross specimens of organ complexes greatly as well as the further description of their structure and topography.



Consequently, the utility model of "fixing fetus and newborn corpses" proposed by us, allows fixing the anatomical gross specimens in the normal anatomical position facilitating further macroscopic, radiographic, anthropometric research and preparation.

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FEATURES OF MORPHOGENESIS OF THE MAXILLOFACIAL REGION STRUCTURES DURING THE 10th-12th WEEKS OF THE PRENATAL DEVELOPMENT

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Understanding the fundamental principles associated with the development of the structures of the maxillofacial region in the prenatal period of human ontogenesis can reveal, along with the general biological laws of morphogenesis, the emergence of their anatomical variants and congenital malformations that arise under the influence of exo- and endogenous factors in critical periods of embryogenesis, mainly at early stages of prenatal development of a human being (Tsyhykalo O.V. et al., 2017). We (Oshurko A.P., Oliinyk I. Yu., 2017) described the morphogenesis of the maxilla and separate structures of the maxillofacial region in human embryos and pre-fetuses aged 7-9 weeks of intrauterine development (IUD). The study was conducted within the framework of the planned complex research work "Morphogenesis patterns, structural and functional properties of tissues and organs in human ontogenesis" of the department of histology, cytology and embryology; department of pathological anatomy of Higher State Educational Institution of Ukraine "Bukovinian State Medical University" (state registration № 0116U002938).

The aim of the study the features of the morphogenesis of some structures of the human maxillofacial region in the dynamics of the 10th - 12th weeks of the prenatal ontogenesis. The study was conducted on 21 specimens of human pre-fetuses with 42.2-79.0 mm of crown-rump length (10-12 weeks of intrauterine development) using the methods of macroscopy, morphometry, manufacturing and microscopy of a series of sequential histological sections of human embryonic specimens and that of histochemistry. All studies were conducted in compliance with the substantive provisions of GCP (1996), European Convention on Human Rights and Biomedicine (of 04.04.1997), Helsinki Declaration of the World Medical Association on ethical principles of scientific medical research involving human (1964-2013), Orders of Ministry of Health of Ukraine № 690 dated 23.09.2009, № 616 dated 03.08.2012.

During the 10th week of the intrauterine development (IUG), one can clearly identify the newly formed branches of the mandible, formed by the hyaline cartilaginous tissue, in the structure of the human maxillofacial region. In the histogenetically modeled bony basis of the mandible it is possible to recognize the alveolar grooves well-filled with mesenchyma cells as well as blood vessels and nerves. The bone plates, forming the alveolar grooves, open towards the side of the tooth buds. Enamel bodies of both milk and permanent teeth are formed. In the soft tissues of the maxillofacial region, the formation of connective tissue structures continues, the mimic and chewing muscles can be differentiated. During the 11-12th weeks of the human IUG a complete separation of the oral and nasal cavities is finished, there is a further formation of the oral cavity vestibule, morphological transformations in the hard and soft