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MORPHOLOGICAL PECULIARITIES OF THE BONE TISSUE OF THE HUMAN LOWER JAW IN CASE OF ITS DISUSE ATROPHY

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Current real-time science and technology techniques based on ENDORET PRGF technologies and the implementation of their results in practical medicine, provide ample opportunities for the use of cell autotransplantation for guided tissue regeneration, including in the treatment of "disuse atrophy" of the human lower jaw bone tissue with early tooth loss.

The purpose of this work is to ensure the principles of biological feasibility and physiological capacity, technical rationality. The pathology in the distal segment of a lower limb, which is a vertical atrophy of bone tissue was confirmed by the methods of computer tomography, Vatech PaX-I 3D Green systems of extra-oral radiography with a scan size range of 16x9 cm, a focal spot of 0.5 mm (IEC60336) with a gray scale of 14 bits with a size of 0.2/0.3 voxel. Using ENDORET PRGF technology, according to the approved BTI protocol, autocellular grafts that have provided a positive result that meets the basic principles of the goal in restoring the mechanisms of physiological processes of normal quantitative and qualitative morphology of bone tissue, with its biological characteristics were obtained.

The results of the study showed that bone tissue on a scale of shades of gray based on the classification of Hounsfield, is not characterized by a single biotype and in the area of missing 3.6 tooth belongs to the second biotype, and in the area of missing 3.7 tooth - to the first biotype by its density. The indicators of densitometric determination confirmed excessive mineralization of the trabecular layer, ie vertical atrophy of bone tissue, which is in the sagittal section in the projection of the missing 36 teeth - with a maximum number of 881 gray standard units (GSU), M=315 GSU (where, M is the average value of absolute number); sagittal section in the projection of the missing 37 teeth - with a maximum number of 1726 GSU, M=1173 GSU. This clinical experience with the use of autocellular grafts in the treatment of "disuse atrophy" of the bone tissue of the jaws, which is essentially scientifically-research in nature, based on modern, at the same time available technologies of cell engineering and technical progress, provides a predictable result of clinical observation and deserves further research and practical testing.

Proniaiev D.V.

FETAL UTERUS ANATOMY

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The thesis deals with determination of chronologic succession regularities in perinatal morphogenesis and formation of topographic-anatomical interrelations of the uterus. Peculiarities of a typical and variant anatomy of the uterus are studied on 160 specimens of fetuses applying a complex of morphological methods of examination: macroscopic, common and thin section, microscopic, vessel injections, making topographic-anatomical sections, radiological, computed tomography, three-dimensional computed reconstruction, morphometric and statistical. Reliability of difference between independent quantitative values was determined by means of Mann-Whitney U-criterion. Spearman statistical test was applied to analyze correlations of the results obtained. By means of the applied methods of examination combined, the individual and age anatomical variability and spatial-temporal perinatal transformations of the uterus with the following determination of critical periods were determined for the first time. It is of great importance for finding morphological preconditions promoting occurrence of congenital developmental defects.

Perinatal changes of the uterine shape are observed, a certain shape of the uterine fundus at every stage of the perinatal development is determined. The relief of the uterine fundus is confirmed to differ by its greatest variability. It can be valleculate, tuberculous, flat and convex. Physiological disappearance of the channel on the uterus is followed. It is confirmed by the determined reliable reverse correlations of average force between the width of the uterine fundus which parameters

range from 6,0±0,21 mm to 6,4±1,60 mm, and parietal-calcaneal length (PCL) of the fetus. On the basis of regularities found in the morphogenesis of the internal female reproductive organs their critical periods and morphological preconditions of occurring variant and congenital developmental defects were determined. Critical periods coincide with the period of an intensive enlargement of morphometric parameters of the uterus – 4-5 month.

Reshetilova N.B.

MORPHOLOGY OF THE THIRD VENTRICLE IN THE 16-20TH WEEKS OF PRENATAL PERIOD OF HUMAN ONTOGENESIS

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The aim of our study is to objectively evaluate the structural transformations of the final brain and its cavities. It is undeniable that pathological changes in the ventricular system of the brain occur in the prenatal period quite often, which determines the relevance and necessity of our study. At the same time, morphological and morphometric parameters of the cavities of the brain are one of the criteria for assessing the ontogenesis of the brain and can serve as a basis for prenatal diagnosis of congenital developmental disorders. The main task of our study was to examine the peculiarity of the formation of the third ventricle in different ontogenetic periods.

To obtain qualitative and quantitative criteria, the present study was carried out on 15 preparations of human embryos and fetuses using morphological methods, such as the study and description of histological and topographic anatomical sections, macroscopy and microscopy, dissection and morphometry. To process the data obtained, the method of variation statistics was used.

Most of the structures of the third ventricle are present at the 13th week of fetal development. The form of cavity is diamond. Its length is 6,2 ± 0,58 mm, width - 2,45 ± 0,25 mm. The roof consists of the medullar and mesenchymal layers. Depth of the epithelial plate is 8,0 ± 1,68 mm. Mesenchymal layer of roof is thinner. It is rich in blood vessels, most of which are located mainly along the lateral margines. Epithelial plate forms a series of wrinkles, which are elongated in the sagittal direction. Medial wrinkles are significantly lower than the lateral. Their structure is more complex due to its branching into smaller, secondary wrinkles.

At the beginning of the 14th week the length of the ventricle is 6,7 ± 0,93 mm, width - 3,3 ± 0,69 mm. At this stage the external surface of the roof is flat, and the internal one has a complex relief because it has a lot of wrinkles. The tops of wrinkles are covered with hills, which are the most pronounced in the posterior part of the roof. A few wrinkles have a common base and their loose end is thickened.

After 15 weeks the length of the third ventricle reaches 7,1 ± 1,27 mm, width - 3,6 ± 0,51 mm. The length of the roof plate reaches 18,0 ± 2,52 mm, width of anterior part - 3,7 ± 0,59 mm and the posterior one - 1,5 ± 0,22 mm. The total thickness of the roof is 0,06 ± 0,06 mm. Lines in the anterior roof cover the entire inner surface of epithelial plate, the thickness of which reaches 14,0 ± 2,1 mm. At this stage of the size of the hypothalamus increases. The zone of matrix almost disappears. It turns into a narrow strip, which is located along the wall of the third ventricle. Migratory layer loses its isolation and spreads laterally. Hypothalamic nuclei are isolated and lose touch with each other and the matrix.

In fetuses after 16 weeks of embryonic development the length of the third ventricle reaches 7,5 ± 1,42 mm, width - 3,8 ± 0,68 mm. The roof of the diencephalon is sharply bent outward. Wrinkles cover the entire inner surface of the roof.

Thus, during the fourth month of embryonic development the configuration of the third ventricle of the brain remains diamond-shaped. Its length increases from 6.2 mm to 7.5 mm, and width - from 2.45 mm to 3.8 mm. Also, the size of the roof plate of diencephalon changes. During these four weeks the length of the roof of the third ventricle increases further. The structure of the vascular plexus becomes much more complicated. Therefore, starting from the fourth month the third ventricle gradually takes the shape inherent in a newborn ventricle.