HEREDITARY DISEASES IN CHILD DEVELOPMENT

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Abstract: *The skull is the most common layer of the skeleton, which has a cartilage and bone structure that performs the function of support and protection for the brain, organs of vision and hearing, the nucleus, and the primary processing of the digestive and respiratory systems. Brain development begins in the embryonic period. During this period, any multifactors for the mother will lead to the birth of an embryo with genetic diseases in the future.*

Key words: *fetus, base of skull, anomaly, anatomy.*

Purpose of the study. Discuss each stage of skull development during the embryonic period. Phylogeny and ontogenesis of skull bones.

Research results. During the embryonic period, the skull goes through membranous, cartilaginous and bony stages. The membranous skull appears in the fetus at the 6th week in the form of a condensation of mesenchyme around the rudiment of the brain. At week 7, the cartilaginous skull begins to form. On both sides of the notochord, parachordal cartilages are laid in the form of thin strips, which originate from the occipital sclerotomes and are the precursors of the occipital bone. Anterior to them, paired pituitary and trabecular cartilages are formed, on the basis of which the sphenoid and part of the ethmoid bone develop. Separately, cartilaginous nasal and auricular capsules for the organs of smell and hearing are formed.

The cartilaginous skull reaches its greatest development at the 10th week of the intrauterine period. The cranial vault retains a membranous structure before the onset of ossification. The bone skull begins to form at the 7th week of embryonic development. Ossification centers appear earlier in the connective tissue matrix and a little later in the cartilage. In total, about 120 ossification centers are formed in the skull. Most of them fuse together to form bones. Most of the bones of the skull develop on the basis of connective tissue, bypassing the

cartilaginous stage. These include the upper part of the occipital squama, the parietal and frontal bones, the squamosal and tympanic part of the temporal bone, the medial plate of the pterygoid process and almost all the bones of the facial skull.

The development of the visceral skull is associated with the gill apparatus of the embryo. Parts of the skull developing from the branchial apparatus - the hyoid, auditory ossicles, styloid process - ossify on the basis of cartilage, while the lower jaw is an integumentary bone; the remains of embryonic cartilage are preserved in it only in the mental symphysis, at the junction of the right and left halves of the jaw. By the end of the prenatal period, primordial cartilage remains only in the form of layers between the bone elements of the base of the skull.

Of particular importance is the sphenoid-occipital synchondrosis, in which the zone of growth in length of the base of the skull is localized. Unossified membranous areas and fontanelles also remain in the cranial vault.

The main reasons for the formative processes of the skull in phylogenesis are the progressive development of the brain, sensory organs and the restructuring of the gill apparatus. Thus, in the lancelet the rudimentary brain is surrounded by a connective tissue membrane, in cyclostomes the base of the skull is cartilaginous, in cartilaginous fish the skull is cartilaginous, in sturgeon fish the cartilage is partially replaced by bone tissue. In the process of evolution, cartilage tissue is gradually replaced by bone tissue, resulting in the formation of a bony skull. In terrestrial animals, the gills are reduced, replaced by respiratory organs - the lungs, and the material of the gill arches goes to the formation of the visceral skull. Thus, the phylogeny of the skull goes through 3 successive stages of development: membranous, cartilaginous and bone. And the cranial vault goes through 2 stages: membranous and bony. In phylogenesis, the number of skull bones decreases significantly, some disappear completely, others grow together.

Development of the brain skull. The cranium is formed simultaneously with the development of the brain. In the first month of embryogenesis, a webbed skull develops. It consists of connective tissue. At the beginning of the second month, a cartilaginous base appears. At the end of the second month, the

cartilaginous base of the skull is formed and the cartilaginous regions are formed: ethmoid, orbital, labyrinth and occipital. From the ethmoidal region the ethmoid bone and the inferior turbinate are formed. From the orbital region most of the sphenoid bone is formed. The labyrinthine region is the cartilaginous basis for the development of the petrous part and mastoid process of the temporal bone. From the basilar region the basilar, lateral parts and the lower part of the squama of the occipital bone develop.

Development of the facial skull. The facial skull develops from the mesenchyme adjacent to the cranial part of the primitive gut. Gill arches form in the mesenchyme between the gill pouches. The first arch is called the mandibular, and the second is called the hyoid. These two arches are called visceral, and the rest are called branchial. The remaining bones of the facial skull are endesmal.

They develop from anlages in the mesenchyme. An exception is the inferior turbinate, which develops from remnants of cartilage in the area of the nasal capsule.

Conclusion. The membranous skull is formed from the 6th to the 7th week of embryonic development and, starting from the 7th week, the bony skull is formed. As a result, about 120 ossification centers are formed in the skull. As a result, most of them fuse together to form bones. Thus, we studied each stage of skull development during the embryonic period, as well as the phylogeny and ontogeny of the skull bones.

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