MORPHOLOGICAL DEVELOPMENT OF THE MANDIBLE IN PRENATAL AND POST-NATAL PERIODS: CLINICAL IMPLICATIONS

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Background. Mandible development begins in the 6th week of intrauterine life and continues through prenatal and post-natal periods. Originating from the first pharyngeal arch, the mandible forms *via* primary intramembranous ossification around Meckel's cartilage, with secondary cartilage contributing to various structures. **Objective of the study.** To provide a comprehensive review of the morphological development of the mandible during prenatal and post-natal periods, emphasizing the clinical implications for craniofacial abnormalities. **Material and methods.** The literature review was conducted, focusing on the embryological development of the mandible, including the initial formation from neural crest cells, the role of the mandibular division of the trigeminal nerve, and the subsequent ossification processes. The study examines primary and secondary cartilage contributions, the growth patterns of trabecular bones, and the formation of key mandibular structures. **Results.** Mandibular development begins with neural crest cell migration to the mandibular arch, forming the primary intramembranous ossification around Meckel's cartilage. Secondary cartilage later develops into the coronoid process, mental tuberance, and condylar head. Initial trabecular bone growth forms the symphysis, coronoid process, and mandibular body. By the 8th week, rapid trabecular bone growth supports muscle formation and lengthening. The mandible separates from Meckel's cartilage, forming the condyle blastema, which fuses by endochondrial ossification at the midline, completing the mandibular symphysis. **Conclusions.** Understanding the intricate development of the mandible has significant clinical implications, particularly for diagnosing and treating craniofacial abnormalities. **Keywords:** mandible development, prenatal, post-natal, craniofacial abnormalities.

THE CHANGES OF HEART HISTOLOGICAL STRUCTURE DURING DIFFERENT STAGES OF DEVELOPMENT

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Background. The human heart undergoes significant histological changes from early embryogenesis to post-natal life. Understanding these changes provides insights into congenital heart defects' etiology and offers potential therapeutic techniques. This knowledge helps assess congenital anomalies and their global health impact. **Objective of the study.** To analyze the histological changes that appear during heart development and their implications on congenital heart defects, highlighting key embryological milestones and the impact of congenital anomalies on human health. **Material and methods.** The study reviewed specialized literature on heart development, focusing on the histological structure changes from embryogenesis to post-natal life. It examined key developmental stages. Also, were used recent studies using advanced medical imaging techniques to detect congenital heart anomalies and understand their impact on cardiac remodeling during critical periods. **Results.** Heart development involves complex anatomical, physiological, and biochemical changes. Key embryological milestones include the formation of the heart tube, involvement of mesodermal and endodermal layers in heart tissue formation, and the development of atria, ventricles, septa, and valves. These changes are crucial for the transition from fetal to neonatal circulation. Congenital heart defects significantly impact hemodynamic transition to extra-uterine life and are influenced negatively by pregnancy complications such as intrauterine growth restriction, preeclampsia, and preterm birth. Advanced medical imaging has improved detection and understanding of these defects. **Conclusions.** Understanding heart development and congenital anomalies is essential for improving global health. This study emphasizes the importance of recognizing key embryological milestones and histological changes to detect and treat congenital heart defects effectively. **Keywords:** heart development, congenital heart defects, histological changes, cardiac anomalies.