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STAGES OF THE EMBRYO DEVELOPMENT OF THE PAROTEAR SALIYAL GLAND IN THE WHITE RAT

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Abstract: The study of the embryogenesis of any organ is extremely important for understanding its structure and functioning, the features of pathological processes, the occurrence of variants and defects. To date, significant material has been collected on such malformations of the parotid salivary gland as aplasia, dystopia and various heterotopia. It is known that in the course of embryogenesis there are some critical periods when the developing organism is most susceptible to the influence of harmful factors, and many authors believe that such critical periods are the states of transition from one stage of development to another, when the former regulatory mechanisms have exhausted themselves, and new ones have not yet reached the required level of development. Given this circumstance, it is expedient to identify stages of development in the course of studying embryogenesis.

Introduction

The parotid salivary gland is the largest of all salivary glands. Outside, it is covered with a connective tissue capsule. Being a complex alveolar gland, it has a soft texture and a well-defined lobed structure. The study of the structure of the salivary glands without accurate knowledge of their morphological features is impossible, special morphological studies of the salivary glands in various animal species are extremely rare, and the available information was obtained from the study of pathological processes or other anatomical structures. The actual material accumulated on the morphology of the group of large salivary glands mainly concerns humans and some species of mammals (cattle, goat, pig). There is information about the histostructure and histochemistry of individual salivary glands of fur animals. In the literature, information about the topography, sources of innervation and vascularization of the salivary glands of various mammals, including rats, is not enough. Therefore, the purpose of this study was to identify the features of the formation of parotid glands in the dynamics of development in rats in postnatal ontogenesis.

Materials and methods

The experiment was carried out on 20 white outbred rats with an average body weight of 10.5; 20.6 and 31.7 g, respectively. Animals were kept under standard conditions: 12-hour light period, temperature 20°C. A series of histological sections were stained with hematoxylin-eosin. The values obtained as a result of measurements were subjected to statistical processing.

Results and its discussion

Our data allow us to state that the appearance of the epithelial bud of the parotid salivary gland occurs on the 15th day, and the source of its development is the

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epithelium covering the maxillary and mandibular processes of the first gill arch. The gap separating these processes closes, so that a gap is preserved in its anterior part, and the posterior part is a strand of epithelial cells.

On the 18-19th day of development, the diameter of the lumen of the rudimentary duct increases, its caudal end dichotomously branches into the rudiments of the secondary ducts, and new secretory sections of the gland appear on the latter. Separate rudimentary secretory sections of the gland are found along the duct, and their largest accumulation is noted around the caudal end of the rudimentary duct, where they can be represented by single acini or a dense group of acini.

On the 19-21st day, the formation of the parotid gland is completed. The caudal end of the parotid duct is divided into 6-8 branches, the secretory sections of the gland associated with them are located in the form of a thin plate directly under the skin below and behind the external auditory canal. Branches of the main parotid duct penetrate into the gland from the side of the medial surface, so we can talk about the formation of the gate of the gland. In the gland, the anterior and posterior lobes are distinguished, consisting of secondary lobules, and those of smaller primary lobules. Pictures of mitosis at this stage are not found.

From the foregoing, it follows that the development of the parotid salivary gland occurs as a result of the implementation of its genetic program. The parotid salivary gland, the ways of its innervation and blood supply develop along converging trajectories, which are combined in their last, third, stage of development, the stage of late organogenesis, when an organ with its parenchyma and stroma is formed.

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