

DEVELOPMENT OF PINEAL GLAND IN VERTEBRATES

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Introduction. The pineal gland is located near to the center of the brain, between the two hemispheres, tucked in a groove where the two rounded thalamic bodies join. This pineal gland is activated by Light, and it controls the various bio-rhythms of the body. It works in harmony with the hypothalamus gland which directs the body's thirst, hunger, sexual desire and the biological clock that determines our aging process. **Material and methods.** We studied the development of pineal gland in comparison from the simple vertebrates till mammals. **Results.** Cyclostomes is special, the most primitive group of modern vertebrates. In myxin pineal body is missing and is found only in the early stages of ontogenesis. In lamprey, in larval and in adult periods has parapineal body. Pisces - the most ancient primary water vertebrates. Pineal body of fish is a derivative of the diencephalon-upper of epithalamus and is a part of the posterior diencephalon. In cartilaginous fish pineal body is attached to the surface of the diencephalon. In bony fish pineal body is missing. In amphibians, pineal gland is large with tubular structure without lobular characters, densely penetrated by blood vessels. Creepy is the first true type of terrestrial vertebrates. Pineal body has a complex lobed structure. In the inhomogeneous density cytoplasm contained pinealocytes and basophils. In birds, the pineal body comes in two forms: spherical and tubular. Pineal gland in mammals is a neuroendocrine gland that is located in the caudal part of the third ventricle. The morphology: cellular, trabecular, alveolar, reticular and mixed type of it's structure. Pineal body consists of stroma and parenchyma. **Conclusion.** Conducted phylogenetic parallels lead to the conclusion that: 1) in all lower vertebrates is functioning circadian axis, which includes the retina, pineal body and suprachiasmatic nuclei of hypothalamus, 2) in many vertebrate pineal body plays a role like a photoreceptor and circadian oscillator; 3) in all lower vertebrates there are extraretinal and extrapineal photoreceptors.