HISTOLOGICAL DETAILS OF THE CAUDAL CERVICAL GANGLION IN THE COYPU (MYOCASTOR COYPUS)

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SUMMARY

The study presents the histological structure of the ganglion cervicale caudale in the coypu (Myocastor coypus). The study was conducted on 49 coypu corpses, of which 29 males and 20 females aged between 3-7 days and 2 years. They were bred at the Şânta Coypu Farm of the Ciurea Forest Range, Iasi County, or in private farms. Dissections were practiced either on fresh unfixed corpses (18) or on frozen corpses (17). In eight cases, we have used formol fixed corpses, while six corpses were fixed and preserved in 70 % alcohol.

The dead bodies were dissected by means of stereoscopic lenses (x3). The sampled caudal cervical ganglions were fixed in Orth, Carnoy and Helly, led up to paraffin and sectioned at 5 µm. The fragments have been stained through the following methods: PASS, HE, HEA, Giemsa and Papanicolau, as well as through direct silver impregnations, Fontana, Bielschowsky and Bodian techniques. Measurements were done with the ocular micrometer, determining the mean sizes according to the location of neurons and the incidence of their sectioning. After silver impregnations, the histological sections pointed out the following microscopic details: the caudal cervical ganglion was delimited at the exterior by a capsule, which looks like a thin conjunctive tissue in an atmosphere of adipose tissue. The capsule was made of three-four fascicles of collagen fibres having a thickness comprised between 24.5 and 32 µm. In the regions where it is thicker, we have noticed conglomerations of adipocyte among the collagen fibres (2-3 groups). On the mediosagittal section, connective septa were pointed out, which divided the territory into cavities, where between 26 and 47 multipolar neurons were noticed. Neurons have a mean size comprised between 22.5 and 32.5 µm. They are vesicle-like and are situated eccentrically. Each neuron has a unique spherical and dense nucleus, rich in metabolically active euchromatin, thus showing the participation of the nucleus in the synthesis of the two subunits – great and small – of ribosomes edifying in cytoplasm the Nissl bodies, so necessary for the synthesis of neuroproteins. The Nissl bodies are well represented, having sometimes a thin granular aspect and other times, a crust aspect.

Around the neurons, there are amphycites, flatted cells having a length of 12.5 µm and a thickness of 3.7 µm. Their nucleus has a discoid, flatted aspect, with a length of 7.5 µm and a thickness of 2.5 µm. Besides the neurons with unique nucleus, there are also binucleate neurons, with nuclei located in the periphery. In this case, the nuclei have a mean size of 10 µm, lower than the unique nuclei, which measure between 11.2 and 12.5 µm. Nucleoli are pointed out, measuring 2.5 µm. Intraganglionary nerve fibres have a thin myelin sheath, while afferent extraganglionary fibres have a clear myelin sheath. The results are illustrated by figures and histological pictures.