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Brief Communication

AN "INCLUSION-BODY-LIKE" CONFIGURATION OF SOME CELL NUCLEI IN MOOSE

At routine post-mortem of a moose an inclusion-body-like configuration of the nuclei of the cells in the granule layer of the cerebellum was found. This was also observed to a lesser extent in glial cells of the cerebrum, epithelial cells of the collecting tubules of kidney and in the hepatocytes.

Material from 11 mooses (2 adults and 9 calves) submitted for routine necropsies to the Swedish National Veterinary Institute with different diagnoses on cause of death, was examined. In addition, 3 moose calves were shot during hunting and used as control. Brain tissue of 1 of the latter was left without fixation during 3 days and then fixed in 10 % formalin solution. In 1 of the others, half the brain was immediately fixed and the other half was left for 24 hrs. and then fixed. The brain of the last animal was fixed immediately after death. The brains of 15 healthy, 2 months old reindeer calves and 4 roedeer (2 calves, 2 adults) were also studied for comparison. The material from reindeer was fixed in formalin 5—10 min. after slaughter while in the material of roedeer the brain from 1 kid was fixed after 24 hrs. and the other within 10 min. after the animals had been shot.

After fixation, the material was embedded in paraffin, cut in 5 μ sections and stained with hematoxylin-eosin and azure eosinate. Material from 1 of the moose cases was taken for ultrastructural study.

Selected areas of cerebrum, cerebellum and kidney were cut from the paraffin block, put in xylol for 24 hrs. at room temperature, hydrated in graded ethanol series 90 % — 70 % — 50 % — 30 % for 10 min. each at 4°C, post-fixed in 2 % glutaraldehyde (0.1 M cacodylate buffer) for 60 to 120 min. at 4°C and in 1 % osmiumtetroxide in 0.2 M cacodylate buffer for 60 min. at 4°C, dehydrated in ethanol series 30 % — 50 % — 70 % — 90 % for 10 min. each at 4°C, put in propylen oxide/Epon 1/1 during 60 min. at room temperature and embedded in Epon.

After embedding in Epon, 1 μ thick sections were cut and stained with toluidine blue for light microscopy, and thin sec-

tions were prepared on a LKB ultratome, picked up on uncoated copper grinds, stained with uranyl acetate and examined in a Philips electron microscope EM 201 at 60 kv with magnifications varying between about 3,000 and 70,000 times.

Light microscopy studies revealed a picture of the nuclei very much similar in shape and size to inclusion bodies in cells of the granule layer of cerebellum, glial cells of cerebrum, tubular epithelium of the kidney and in the hepatocytes. The nuclei appeared similar in tissues fixed early as well as late.

Azure eosinate staining did not reveal inclusions in any case. Similar nuclear findings were also found in old moose although to a much lesser extent, and sparsely in young roedeer. They were scarcely observed in adult roedeer and not at all in reindeer calves.

In the ultrastructural investigation it was found that the inclusion-body-like configuration of the nuclei was a condensation of the chromatin in the center of nucleus with additional condensation of some chromatin material at the nuclear envelope (Fig. 1). Viral particles were not detected.

Although only few animals have been studied, it appears that the nuclei specially in the granule layer of the cerebellum of

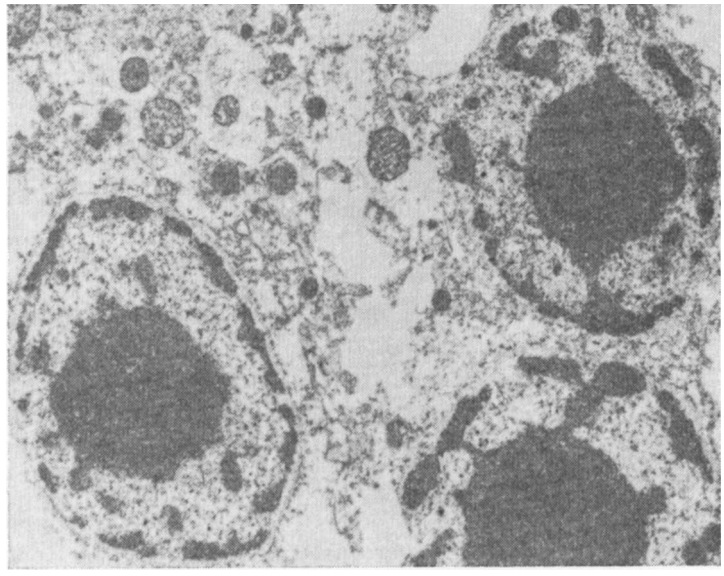

Figure 1. Cerebellum of moose calf. Granule layer. Note condensation of chromatin centrally and at nuclear envelope. 10000 ×.

young moose have a different structure when compared with those of the reindeer and roedeer. The fact that this configuration was consistently observed in young animals, but only in occasional cells of adult animals, may be due to a developmental process.

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