78. Experimental Studies on the Cooling Irrigation of Cerebral Ventricular System (IV)

Electron Microscopy of the Choroid Plexus

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It was already reported by the author that the electron microscopical examination of the periventricular tissue of the dog was revealed the swelling of a few pericapillary astroglia processes after irrigation of the cerebral ventricular system with cold Ringer's solution.

In present the electron microscopical changes of the choroidal epithelium of the lateral ventricles after the same irrigation was examined. The epithelial cells of the choroid plexus showed hydropic swelling, less density of cytoplasm and swelling of a few mitochondria, while polypoid process, nucleus and the other organelles showed no remarkable changes. After the irrigation with cold Ringer's solution, 50 ml. of polyvinyl pyrrolidone was infused into the ventricular system. Then, dilatation of the intercellular space and the basal infolding membrane observed, but the terminal bar was not dissociated. The small particles with high density, which would probably be polyvinyl pyrrolidone, were sometimes recognized on the surface of polypoid process. These particles were also recognized in the apical pore, endoplasmic reticulum, basal infolding membrane, pericapillary space and capillary space. Therefore it was presumed that the particle, which was infused into the lateral ventricle, was carried to the capillary space of the choroid into the lateral ventricle, was carried to the capillary space of the choroid plexus passing through the choroidal epithelium. This systematic passage of the polyvinyl pyrrolidone particles was not observed without the previous irrigation with cold Ringer's solution.

From the above mentioned findings, it was considered that the transfusion to capillary blood vessel in the choroid plexus from ventricular cavity would probably be influenced by the irrigation with cold Ringer's solution.