11. Agar-gel-electrophoresis and Immunelectrophoresis of Cerebrospinal Fluid Proteins

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Cerebrospinal fluid proteins from patients with neurological diseases, especially from neurosurgical cases and from healthy persons were analysed electrophoretically and immunelectrophoretically.

Pherograms of CSF proteins from neurologically normal persons were characterized by a presence of prealbumin and τ -fraction and by a low and flat γ -globulin fraction. Immunelectrophoretically, there were ρ_2 , α_1 - and α_2 -lipoproteins normally. β_1 -lipoprotein was, however, never recognized in CSF from normal persons.

Pherograms of CSF proteins from patients with intracranial tumors were found frequently to be more or less similar to those of serum proteins. β_1 -lipoprotein was commonly identified in these tumor cases by immunelectrophoresis. In almost all cases that showed extremely serum-like pherogram, it was found that precipitation line pattern of lipoproteins was quite similar to that of serum (i.e. thick precipitation lines of α_1 - and β_1 -lipoprotein and scarcely recognizable α_2 -L and ρ_2 precipitation lines) and that a precipitation line of α_2 -macroglobulin was of distinct type as in serum, the arc of transferrin-II was not found and a precipitation line of β_2 -macroglobulin was recognized. These changes both in pherogram and in precipitation line pattern can be explained by an abnormal entrance of serum proteins into the CSF.

No distinct change was found in CSF proteins from patients with epilepsy, sequelae after head injury, extrapyramidal diseases and others.

Hitherto unknown fraction in CSF was demonstrated in the β_2 -region with rabbit's antiserum for human-cerebrum absorbed with human serum. It is considered to be of an origin in the central nervous system.

12. Studies on the Intensible Water Loss in the Neurosurgical Patients

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The first report on this problem was made at 21st. Japanese neurosurgical society.