

Abnormal C.S.F. Dynamics in Aged Patient and its Clinical Significance

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It is said that the use of radioisotope cisternography on the studies of C.S.F. dynamics yield valuable information in varied pathological state. However, the relation between abnormalities of C.S.F. dynamics and cerebral dysfunction frequently happened in aged persons is not yet elucidated. The purpose of this report is to summarize our studies on RI cisternography in aged cases.

Materials and Methods: Fiftyseven examinations on 54 cases (male 37, female 17) ranging 2 to 90 yr. (mean 62 yr.) were performed R I cisternography. Among these cases 45 cases were over 50 yr. The clinical diagnosis of these cases were cerebrovascular diseases (17 cases), dementia (11 cases), gait disturbance (5 cases), brain tumor (5 cases), post meningitic encephalopathy (3 cases), post traumatic hydrocephalus (4 cases), spinal cord tumor (5 cases) and others (4 cases).

One mCi of $^{169}\text{Yb-DTPA}$ was introduced intrathecally by spinal tap with simultaneous measurement of spinal pressure. Then images and time course of radioactivities of head, thoracic and lumbar compartments were recorded sequentially at 0, 3, 6, 24, 48, (72) hrs after intrathecal injection of radionuclide using Pho/Gamma HP gamma camera. Among many clinical symptoms cases were evaluated especially by the presence of such as gait disturbance and/or incontinence and/or mental dullness and/or mutism. There symptoms were compared with cisternography

analysis. Because normal control (adult) shows maximum activity of the cerebral compartment around 6 hrs, when the activity of the head at 24 hrs after injection was higher than that of 6 hrs are defined to have delayed C.S.F. circulation.

Results: Among 47 cases with more than 50 yr. normal C.S.F. circulation was found only in 15%. Cases with delayed C.S.F. circulation (D.C.C.) without ventricular reflux (V.R.) were found in 57%. Also, cases with D.C.C. with persistent V.R. (5%), cases with D.C.C. with transient V.R. (5%), cases with transient V.R. (5%), cases with obstruction in spinal cord (5%), and cases with focal concentration of R I were found.

Therefore delayed C.S.F. circulation was found in 67% of the cases studied. Whereas in 5 control cases below 50 yr. (mean yr.), no delayed C.S.F. circulation was found. Ventricular reflux (either persistent or transient) was found in 15% of all cases studied.

During the course of study for 14 month, fever reaction due to cisternography (pyrogen reaction) was found in 2 cases (4%).

In summary, high incidence of delayed C.S.F. circulation was observed in aged patients. The significant disturbance in major C.S.F. circulation might influence on the minor C.S.F. circulation which relate closely with metabolism of brain tissue. Corelation between the degree of neurological symptoms and abnormal C.S.F. circulation is to be investigated in detail.