

## Estimation of Transferred $^{169}\text{Yb}$ -DTPA Amounts from Cerebrospinal Fluid to Blood in Normal Pressure Hydrocephalus

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Isotope cisternography has been the reliable method for the diagnosis of Normal Pressure Hydrocephalus.

Isotope cisternography, however, has some difficulties in estimating actually how much amounts of intrathecally injected radioisotope were absorbed from cerebrospinal fluid to blood.

The purpose of this study is to obtain the amounts of radioactivity transferred at intervals from cerebrospinal fluid to blood in patients with progressive dementia of varying degrees and durations.

We used  $^{169}\text{Yb}$ -DTPA for this study, because of its stability and short biological half-life time (quickly excreted from kidney) for the diagnosis of Normal Pressure Hydrocephalus.

Blood and urine samples were counted at intervals every hour for first 6 hours, and 12, 24, and 48 hour following intrathecal administration of radionuclide and hourly urine volumes were also measured.

Transfer curves of radioisotope from cerebrospinal fluid to blood was obtained by plotting subsequent blood radioactivity at intervals, which was calculated from the equation, using rate constant of urinary excretion.

This curve obtained was strongly helpful for the diagnosis of Normal Pressure Hydrocephalus with simultaneous Isotope cisternography and clearly showed us the pre and postoperative changes of cerebrospinal fluid absorption from the brain.

## Scintigrams of the Cerebrospinal Space (Report 3)

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Scintiscanning of the cerebrospinal space has hitherto been made by the authors on a total of 200 cases, and in the present paper are shown the findings on 65 cases on whom the scanning been made since October, 1971.

**Methods** 100–200  $\mu\text{Ci}$ . of  $^{131}\text{I}$ -HSA and 0.5–1.0 mCi. of  $^{169}\text{Yb}$ -DTPA were used as the nuclides. These radioisotopes were infused either by puncture of the lumbar vertebra or by puncture of the infraoccipital region, and the scanning was started an hour after the respective infusions.

**Results** Myeloscintigraphy revealed that 13 cases were free of abnormalities, 16 cases were suspected of intervertebral herniation and have been placed under observation and given some therapies as outpatients, 14 patients were admitted for treatment by traction and so forth but have not been operated on as yet, and 20 cases were suspected of intervertebral herniation or spinal cord tumor, and based on oil myelography made after the scanning, have been operated on. Out of the 20 cases operated on, three were found to have spinal cord tumors,