mum value 60 minutes after the injection in the glioblastoma. In the oligodendroglioma and the epidermoid maximum L/B ratio were obtained 2–3 hours after the injection. On the other hand, in non-neoplastic lesions, such as arachnoiditis, epidural hematoma, brain abscess and so forth, maximum L/B ratio were obtained 60 minutes after the RI injection.

Thus, it would be concluded that the scanning would be favorably delayed for 60 minutes after the injection of ^{99m}Tc-pertechnetate as a radionuclide.

Comparison of the Radionuclide Imaging and EMI Scan for Detecting Brain Diseases

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The comparison of the radionuclide imaging (RN) and computerized axial tomography (CT) for detecting various brain diseases was performed.

RN was performed with a gamma camera using perchlorate premedication followed by 20 mCi of ^{99m}Tc-pertechnetate.

Dynamic images and standart four views 2 hours after intravenous injection of ^{99m}Tc-pertechnetate were used for comparison. With CT, intravenous contrast medium was sometimes used.

One hundred fifteen patients with brain tumors were reviewed, and 89 out of them were detected with both two studies.

In other 26 patients, 5 were detected only by RN, 8 only by CT and 13 were missed by both. These results mean that CT is able to detect a little bit higher percentage of brain tumors than RN. About the location of the tumors there is no significant difference in detectability between two studies.

In assessing the results of non neoplastic disease in these comparison studies, RN was superior to CT in detecting occulusive cerebrovascular diseases, but CT was superior to RN in the identification of intracerebral hemorrhage, porencephalic cyst, hydrocephalus and cerebral atrophy.

Multilevel Analysis of Isocount Scanning in Brain Tumor

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In the previous reports, the theoretical background and technical details of the isocount scanning were described. Based on clinical experiences of various brain diseases, the newly developed

scanning method was confirmed to be more useful than the coventional scintiscanning. Besides the new scanning method, a new display system was also developed for the sake of more precise analysis of the isocount scanned data. This display method is called multilevel analysis or multilevel slicing.

In the present investigation, this method was applied to forty-six cases of brain tumors, including forty cases of supratentorial tumors and six cases of infratentorial tumors, positive rates being 95% and 67% respectively.

Furthermore, as a measure of the numerical analysis of the scanned data, the maximum uptake rate of the target area (RTmax = Tmax/NTmean) and the deviation indes x(DI = D_T/NTmean) are introduced: Tmax, NTmean, D_T and D_{NT} are respectively defined as a maximum uptake of the target area, a mean uptake of the non-target area, a deviation rate of the target area and a deviation rate of the non-target area. They can be obtained from analysing the television figures of multilevel analysis.

By this method, thirty-four cases of the supratentorial tumors were studied. In cases of gliomas (12 cases), meningioma (9 cases) and metastatic tumor (7 cases), mean RTmax were 1.26, 1.37 and 1.24 and mean DI were 0.84, 0.68 and 0.60 respectively. In gliomas the RTmax and the DI were correlated with the degree of malignancy of the tumors.

It was discussed that this method of numerical analysis could be aldo applied to the numerical data obtained from EMI scanning.

Dynamic Study of Cisternography with 197-Yb DTPA

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We observed the cisternography and its processed image and the accumulation rate in blood on 32 cases of CNS (central nervus system) disease, injected intrathecally 700 μci–800 μci of 197-YbDTPA.

The cisternography was made at 30 min, 1h, 2h, 3h, 4h, 24h, 48h, and 72h after intrathecal injection of 197-YbDTPA and blood activity was counted at 10 min, 20 min, 30 min, 1h, 2h, 3h, 4h, 24h, 48h, and 72h. after intrathecal injection.

The curve of the blood sequential activity of 197-Yb DTPA was classified 4 types, but it could not resolved the concern with CNS disease.

We carried out the processed image of cisternography for the purpose of the observation of dynamic study of CSF. The method of the processed image was as follow, that is, each image was devided by the sum image from 30 min to 72h. The processed image get to show the dynamics of CSF.

The static image by the original cisternography and the dynamic image by the processed image combined seemed to be useful for the diagnosis of CNS disease, especially normal pressure hydro-