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CLINICAL UTILITY OF THE BRAIN SCINTIGRAPHY FOR NON-NEOPLASTIC BRAIN DISEASES. H. Mori, T. Maeda and K. Hisada. Department of Nuclear Medicine, School of Medicine, Kanazawa University. Kanazawa.

The purpose of this paper is to evaluate the clinical utility of the brain scintigraphy in the diagnosis of non-neoplastic brain diseases, compared to the X-ray CT. Of 197 patients studied by the brain scintigraphy and X-ray CT, the 27 cases detected by the brain scintigraphy and not by the X-ray CT were 16 cases of obstructive cerebrovascular diseases, 1 case of AVM, 2 cases of CCF, 1 case of giant aneurysm, 1 case of chronic subdural hematoma, 4 cases of encephalitis and 2 cases of purulent meningitis. It would appear that the brain scintigraphy is more sensitive than the X-ray CT for the detection of non-neoplastic diseases, although the combined studies will give the best diagnostic results.

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DIAGNOSTIC EVALUATION ON CEREBRAL HEMISPHERE SCINTIGRAPHY USING Tc-99m-MAA. T. Kakuda, M. Ono, K. Yamashita, T. Morishige, F. Morishige. Fukuoka Torikai Hospital. Fukuoka.

Using Tc-99m-labeled macroaggregated albumin (Tc-99m-MAA), we made an examination of diagnostic evaluation on cerebral hemisphere scintigraphy with various kinds of cerebrovascular diseases in 225 cases. The particle size of MAA used in this study ranged from 10 to 100  $\mu\text{m}$ . Scan was performed after injection of 3 mCi of Tc-99m-MAA into common carotid artery.

No side effects were observed except for one case with headache.

Distribution of Tc-99m-MAA was found to be homogeneous in normal cerebral hemisphere. Most lesion was shown as defect. This method is useful for detecting cerebral infarct and the diagnostic evaluation on it was 64.0%. By this method cerebral infarct could be easily represented not only in main artery but also in such a very small artery as hardly detected by CAG. On cerebral infarcts the clinical finding was shown immediately after onset in this method and therefore the method was superior to CT brain scan.

The dose of Tc-99m-MAA used in this method is much lower compared with those of ordinary brain scan, its excretion is speedy, and therefore internal radiation exposure is diminished.

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ANALYSIS OF THE T/A CURVE WITH NON-DIFFUSIBLE TRACER IN CEREBRAL DISEASE (WITH SPECIAL REFERENCE TO THE DECONVOLUTION METHOD). K. Horibe, T. Ikeda, S. Takeda, K. Akagi, T. Kondo, M. Kawanishi, K. Kusumi and Y. Nakamura. Osaka National Hospital and Osaka University of Medicine. The Institute of Scientific and Industrial Research, Osaka University, Osaka.

By simultaneously measuring the aortic arch, we could remarkably improve the accuracy of the T/A curve with intravenous non-diffusible tracer. Besides, we developed a deconvolution program in order to grasp the behavior produced by infusion of an ideal RI impulse at the aortic arch. The transfer function obtained by the use of the deconvolution program succeeded in showing the reverse distribution of the mean blood flow rate for the region from the aortic arch to the head. Determination of variance and skewness of the transfer function from the center of gravity enabled us to presume quantitatively the distribution of the blood flow rate and the degree of its retention.

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COMPARATIVE STUDY OF NPH BY RN CISTERNOGRAPHY AND CT SCAN IN THE AGED. S. Kawaguchi, M. Iio, H. Murata, K. Chiba, H. Yamada, M. Noguchi and E. Ohtake. Tokyo Metropolitan Geriatric Hospital, Itabashi, Tokyo, Japan

In the aged cases, RN cisternography revealed with high incidence the existence of continuous ventricular reflux (VR) of the label, suggesting normal pressure hydrocephalus (NPH). On the other hand brain CT scan of the geriatric cases frequently show periventricular lucency (PVL) with & without ventricular dilatation (VD). Since PVL is sometimes referred as the evidence of hydrocephalus, in this study, RN cisternography & CT scan were simultaneously performed on the geriatric cases with & without NPH and relationship between VR, VD and PVL were examined. Materials were 67 clinically suspected NPH cases, with 31 males & 36 females. Ages were 68.5 years old in average. In RN scan presence of VR was evaluated. In CT scan ventricle/cerebrum ratio was measured as an index of ventricular size. The results were as follows: RN study revealed VR (+) in 36 (group 1), (+) in 7 (group 2) and (-) in 24 cases (group 3). Then, results of CT scan were analyzed according to the RN study. V/C index were  $0.30 \pm 0.05$  in group 1 and  $0.29 \pm 0.06$  in group 3. PVL were found in 54% in group 1, 38% in group 3.

To conclude, neither periventricular lucency nor ventricular dilatation relate with ventricular reflux in NPH cases of the aged.