VI. Nervous System

The Clinical Study to the Meningioma in Scinti-scanning and Angiography

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Since 1959, we are now developing to a brain scanning technique and results of these brain scanning were reported in many symposiums previously.

In this series, we studied about the meningioma concerning with a diagnostic accuracy by both scinti-scanning and angiography. We used mostly both of scinti-scanning and angiography as a diagnostic tool for brain tumor. In the scinti-scanning, RISA was used mainly and $^{203}$Hg-chloromerodrin, $^{99m}$Tc-pertechnetate, $^{75}$Se-selenite, supplementary. In the angiography, 10 ml of 60% Urografin was injected via A. carotis communis, or A. Vertebrales, and recorded by photograph in both arterio-phase and veno-phase.

We studied to the subjects of 18 patients whose operative confirmation of meningioma were obtained. Growth of meningioma is slowly, and the tumor encapsuled a solid cover with forming vascularity lesion. And it can not be seen a infiltration of a metastasis in many cases. Namely, as meningioma is benign mostly, it is oughted to recover perfectly by the extraction of tumor in earlier stage.

In this series, we obtained results as follows;

1) Meningioma was obtained the highest diagnostic accuracy among the brain tumor by either scinti-scanning and angiography.
2) The diagnostic accuracy was not influenced with varying histological types of the tumor in both methods.
3) In scinti-scanning, the diagnostic accuracy was same grade in any radioisotopes, namely not related with nuclide.
4) The diagnostic accuracy of brain scanning was varied by a condition of circumstances of tumor, for example, with bleeding or not.
5) Usually, diagnostic accuracy is affected by the tumor localization in brain scanning, except the meningioma. Meningioma was not changed the accuracy by spot where tumor localized.
6) Tumor uptake of the scinti-scanning pattern trended to be higher in the younger age.
7) As occurring rate of the meningioma in blood group was studied, group "A" was dominant rather than any other groups.

A Study with Brain Scanning in Cerebral Vascular Accidents

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On the basis of experimental studies by Brown, Marrison, and Overton, who emphasized the diagnostic availability of brain scan in cerebral vascular accidents, we evaluated the diagnostic significance of this method in 26 patients with cerebral vascular

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accidents, and, as contrast, in 4 patients with central nervous involvement.

The cerebral vascular accident patients were directed to $^{99m}$Tc-brain-scan and electroencephalography at one to two weeks' interval since the onset of acute stage, while some of them also underwent cerebral angiography.

In cerebral vascular accidents positive scan was obtained most frequently two to four weeks after onset of disease, and 57% of the total cases were positive on brain scintigram.

In addition to cerebral hemorrhage and subdural hematoma which were detectable at a relatively high rate, cerebral thrombosis could be detected in 36% of cases.

Diagnostic accuracy of brain scan and electroencephalography was nearly identical in that it was 46% by the former and 50 to 35% by the latter procedure.

Brain scan proved useful in visualizing localization and extent of neoplasms, whereas electroencephalography proved an efficient examination of choice in locating lesions, especially in the acute stage.

In cerebral hemorrhage, thrombosis, and vasculitis the scans might be obscured and ill-delineated with variable degrees of increased radioactivity, which well contrasted with those seen in cerebral neoplasm. As a whole, cerebral lesions were far more easily visualized in lateral than in anterior or posterior view.

Positive scan was persistent in cerebral vascular accidents even after resolution of clinical signs, and in less critical cases scan was positive.

Brain scan is a very helpful diagnostic ancillary in detecting localization of lesions in cerebral vascular accidents.

Clinical Study of Myeloscintigram on the Brachial Plexus Injury

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Patients of brachial plexus Injury with root avulsion were examined by RISA-Myeloscintigram.

RISA was injected intrathecally on the lumbar region. A dose of 100 $\mu$Ci per 0.2 ml of RISA mixed with 2 ~ 3 ml of spinal fluid at the time of Injection and Scanning was started 1 ~ 2 hours after the Injection.

The characteristic findings of leakage by myeloscintigram were present in 7 of 9 cases and of defect by hematom was shown in 1 case, 1 case is negative in myeloscintigram.

This was a safe procedure and relatively a simple examination with no disturbing side effects.