IX. Brain

Clinical Evaluation of Brain Scanning (The Second Report) Brain Scanning with Short Lived Radioisotopes

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Thirty-six of 55 patients scanned with short lived isotopes had a final diagnosis of an intracranial mass lesion. (27 cases scanned with ^{99m}Tc-Pertechnetate, 4 cases with ^{113m}In-Fe-DTPA 5 cases with ^{99m}Tc-Pertechnetate and ^{113m}In-Fe-DTPA). To evaluate the diagnostic accuracy of these cases, the results of brain scan and another procedures were classified to 5 grades according to it's degree of detectability.

(1) The detectability of brain scan (卅～± 89%, 卅～+ 86%, 卅+ 69%, 卅 61%) was almost the same to angiography (卅～± 97%, 卅～+ 88%, 卅+ 72%, 卅 53%), and superior to air study (卅～± 80%, 卅～+ 67%, 卅+ 60%, 卅 20%) and EEG (卅～± 80%, 卅～+ 60%, 卅+ 0%, 卅 0%).

(2) The detectability of the brain scan with short lived isotopes is superior to the detectability of the scan with ^{131}I-human serum albumin which was reported last year (卅～± 78%, 卅～+ 74%, 卅+ 59%, 卅 37%).

(3) The histology of intracranial tumor is an important factor in the detection by scanning.

All cases of 7 meningiomas and 7 metastatic brain tumors were detected, and any case of 2 pinealoma was not detected by scan. 6 cases of 7 astrocytoma were detected by scan.

(4) The comparative study was done to determine the diagnostic accuracy of several scanning agents in the same patient.

(8 patients were scanned with ^{99m}Tc-Pertechnetate and ^{131}I-HSA. 4 patients were scanned with ^{99m}Tc-pertechnetate and ^{131m}In-Fe-DTPA. And 4 patients were scanned with another combination).

The scans with ^{99m}Tc-Pertechnetate was superior to ^{131}I-HSA in 3 cases, and the same in another 5 cases. A scan with ^{113m}In-Fe-DTPA was superior to the scan with ^{99m}Tc-Pertechnetate in a patient. In another 3 cases, there were no difference in detectability between these two short lived isotopes.

These results suggest that brain scanning with short lived istopes is of great diagnostic value in detection of intracranial mass lesions.