

Brain Scanning

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Brain scanning with new agents, ^{99m}Tc -pertechnetate and ^{113m}In -Fe-EDTA, has recently been employed in Chiba University Hospital. Their short half lives and no beta emission allow to increase the administration dose to millicurie order without additional radiation hazard, resulting higher counting efficiency which is favorable for the detection of brain tumors.

Seventy two cases histologically verified were analyzed in this report. By the addition of the new agents, the rate of diagnostic accuracy increased to 64% from 52.2% of the time ^{203}Hg Chlormerodrin was a agent for the brain scanning. The diagnostic accuracy of the brain tumor by ^{99m}Tc and ^{113m}In is 84.7% which is much higher than by ^{203}Hg Chlormerodrin. This rate is fairly comparable with that of the angiographic study (82.3%).

When one would evaluate the role of the scanning in brain tumor detection, the pathology, the size, and the location of the tumor should be taken into consideration. The per-

cent diagnostic accuracy of the scanning was high in meningioma (14/14), glioblastoma (12/15), and metastatic tumors (5/8), and was low in hypophyseal tumors (3/8) and acoustic neurinoma (1/3). Judging from the phantom experiment, even the tumor-brain ratio of the agent was as low as 3 to 1, the tumor larger than 3 cm in diameter would be detectable. While the tumor locates in the parietooccipital or in the midline region is more easily detected by the scanning rather than by the angiography, the tumor of the brain-stem or of the occipital region is hard to be identified by the scanning.

The brain scanning for the detection of tumors is as effective as the angiography, and is more easily and safely performed than the angiography. The time required for the scanning (1 to 1.5 hours for a patient) will be lessend by the use of the scintillation camera. Besides, the scintillation camera will make the dynamic study useful for the diagnosis of brain pathology.

2) Thyroid Gland

Thyroid Scintigram

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Thyroid scannig is one of the most popularized and the most valuable examinations

in the field of nuclear medicine at present. Many literatures on this problem are already