30–60 minutes. According to the malignancy, the up-take reach its peak fast, and increase. The edema of peritumoral tissue is well visualized about 20 minutes after injection.

Discussion to q-6.

Scintillation Camera for Brain Scanning

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Since 4 months we have used scintillation camera of Nuclear Chicago Company for brain scanning. In our PHO/VAMMA type III scintillation camera, multichannel memory scope, high speed data printer and automatic high speed camera are built in.

By use of multichannel memory scope, we can get the actual radioactivities at 1600 points on 40×40 matrix independently. Replaying the memory scope, we can change the threshold as well and the visual records of high quality can be obtained as a map picture. Furthermore, by means of panel control, we can get easily the three dimensional image of radioisotope distribution at 1600 points as a profile picture.

By use of memory scope in addition to the conventional scintiphotos with polaroid camera, it is expected to enhance the accuracy in diagnosis.

The use of automatic camera permits us the rapid serial scanning up to the maximum speed of 4 per second. When we use the high speed printer, we can read out the count rates over 1600 points independently. By use of these, scintigraphic tumor/brain uptake ratio can be calculated. Time course of uptake ratio thus calculated during serial scanings revealed three principal patterns, 1) gradual increase (astrocytoma, oligodendroglioma, infraction), 2) gradual decrease (arteriovenous malformation, meningioma), and 3) initial increase followed by decrease (glioblastoma). Although the number of studies is still limited, the correlation between the histology and the pattern of time course of uptake ratio seems to be satisfactory.