F) Tumors

Tumor Scanning with $^{67}$Ga Citrate Measured by High Sensitive Collimater

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To make $^{67}$Ga citrate scanning more sensitive, we have made up the high sensitive collimater for trial. We make a report on the sensibility, the resolution and the clinical application using this new apparatus.

The new collimater is the lead honeycomb collimater with 37 holes and focus distance 12.5 cm.

This sensibility is 3.7 times that of collimater used so far, but the resolution which is 16 mm FWHM is less sensitive than the former one.

The decrease of resolution is compensated enough with the improvement of photographing condition, that is, the increase of the sensibility and thus we can get the good film useful to diagnose.

Of 58 cases who spent 48 hours after $^{67}$Ga citrate 1–1.5 mCi injection, we compared the data by the new high sensitive collimater with that by the honecone collimater used so far and there was no difference between them to diagnose. But the findings about the form of tumor and the inner construction in detail were better in the high sensitive collimater than in the former one. It was positive in 90% of patients with lung cancer. When we diagnose metastatic mediastinal lesion, this procedure is better than X-ray photo.

Furthermore, as we are able to carry out faster in scan speed, the time of examination may be shortened and miniscanning be recorded as well.

Diagnostic value of the 67-Ga citrate scanning in the detection of abdominal malignant lymphoma

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As already known 67-Ga citrate deposit to the liver, bone etc. and excreted into the intestine, it seems to be difficult to evaluate abdominal malignant lymphoma on 67-Ga citrate scintigram.

We performed 67-Ga citrate scintigraphy and lymphography in 23 cases of malignant lymphoma. The cases include 19 reticulum cell sarcoma, 1 lymphosarcoma, 1 Hodgkin’s disease and 2 others.

Abnormal lymphogram is obtained in 19 cases and 12 out of 23 cases were positive of abnormal activity by radioisotope scanning.

The positive scanning has been suspected in 8 cases out of 18 lymphographically abnormal cases, but actually only 4 cases were positive. Remainder of the 4 cases were under the treatment at the time of scanning.

Four abnormal cases by scintigram could not be evaluate by lymphography due to undetectable portion. Another one of the lymphographically unremarkable cases was positive by scintigram probably due to progression of the disease in 6