

$^{67}\text{Ga}$ -citrate could not be found by  $^{111}\text{In}$ -BLM. Normal  $^{111}\text{In}$ -BLM scintigram, bone marrow (thoracic, lumbal vertebrae, and the pelvis) were well visualized in 26 of 34 cases, and little activity concentrated in the heart in 11 of 34 cases.

$^{111}\text{In}$ -BLM scan was rather difficult to find out mediastinal lesion than  $^{67}\text{Ga}$ -citrate. It was very difficult to find out abdominal lesion by  $^{67}\text{Ga}$ -citrate, because  $^{67}\text{Ga}$ -citrate were excreted into alimentary tract. But also it may be very difficult

for  $^{111}\text{In}$ -BLM to find out abdominal lesion, because by  $^{67}\text{Ga}$ -citrate only 3 in 20 cases lumbal or pelvic lesion can be found, and only 3 in 20 cases renal lesion can be found.

Conclusion:

1.  $^{67}\text{Ga}$ -citrate was more sensitive in tumor than  $^{111}\text{In}$ -BLM.
2.  $^{67}\text{Ga}$ -citrate was valuable in detecting mediastinal lesion.

### **Tumor Scintigraphy: Comparison and Clinical Evaluation of $^{67}\text{Ga}$ -Citrate and $^{75}\text{Se}$ -Selenomethionine**

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#### **Introduction**

In the tumor scintigraphy with  $^{67}\text{Ga}$ -citrate and  $^{75}\text{Se}$ -selenomethionine in cases with various kinds of tumor, very useful results were obtained clinically.

#### **Method**

$^{67}\text{Ga}$ -citrate scannings were performed 1–3 times for 1–4 days after an intravenous administration of 2 mCi, and  $^{75}\text{Se}$ -selenomethionine scannings several times during 10 minutes to 4 days after the administration of 100–250  $\mu\text{Ci}$ .

#### **Result**

Abnormal concentrations of  $^{67}\text{Ga}$ -citrate were noted in malignant tumors, inflammatory lesions and sarcoidosis, but no accumulation of  $^{67}\text{Ga}$ -citrate in benign tumors.

While non-epithelial malignancies such as malignant lymphoma, malignant thymoma, malignant melanoma and mycosis fungoides etc. and liver cell carcinoma were visualized as the hot areas on  $^{75}\text{Se}$ -selenomethionine scintigrams but  $^{75}\text{Se}$ -selenomethionine scanning were negative in inflammatory lesions, benign tumors and carcino-

mas except for liver cell carcinoma.

#### **Conclusion**

Because the half life of  $^{67}\text{Ga}$ -citrate is shorter than that of  $^{75}\text{Se}$ -selenomethionine, the administration of a large dose of  $^{67}\text{Ga}$ -citrate is possible, and the tumors were clearly outlined.

On the other hand,  $^{75}\text{Se}$ -selenomethionine was administered only a small dose of its long half life, so the contour of the lesions was not clearly demarcated occasionally.

The abnormal concentrations of  $^{67}\text{Ga}$ -citrate were noted not only in malignant tumors (both epithelial and non-epithelial), but also in inflammations, sarcoidosis and normal pulmonary hili.

Therefore, the differentiation of natures of the malignant changes was almost impossible.

While  $^{75}\text{Se}$ -selenomethionine was concentrated only in hepatocellular carcinoma and non-epithelial malignant tumors. These results suggest that the abnormal accumulation of  $^{75}\text{Se}$ -selenomethionine may be considered as a sign of existence of non-epithelial malignancies except for liver cell carcinoma and its metastasis.