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2167 CASES OF Ga-67 SCANNING. S.Shida,H.Omigaawa,S.Mitanihara,A.Okuyama,S.Hosoi,H.Hikita,H.Nishikawa,E.Nakazawa,K.Honda,S.Shiiba,H.Watanabe,T.Kumazaki,Y.Yamagishi,H.Shimizu,T.Saito. Department of Radiology,Nippon Medical University,Tokyo.

We performed 2167 cases on Ga-67-citrate scanning from March 1970 to January 1979. In 1752 of 2167 cases,except whole body scanning for the purpose of reference on metastases,which were diagnosed on biopsy or operation or autopsy,we examined histologically and organically.

Method;

As a rule,Ga-67-citrate scintigraphy was performed at 48 hours after the intravenous injection of 2 mCi of Ga-67-citrate.

In childhood we reduced the dose suitably.

Results;

- 1) Positive rates of the malignant tumor were 78.2% in extremity,66.5% in thorax, 63.7% in head&neck,33.8% in abdomen.
- 2) Positive rates of the histological classification were 73.4% in malignant lymphoma,69.4% in squamous cell carcinoma,37.7% in adenocarcinoma.
- 3) Positive rates of the organic differentiation were 87.8% in primary lung cancer, 31.6% in breast cancer,20.7% in gastric cancer,24.8% in cancer of colon,etc.
- 4) Disorders comparatively high rate,except for the malignant tumor were 84% in sarcoidosis,64% in pneumonie,63% in pulmonary tuberculosis.Then,of 30 cases of benign bone tumor,17 cases were positive(57%).

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CLINICAL EVALUATION OF REPEATED Ga-67 SCANS IN MANAGEMENT OF MALIGNANT LYMPHOMA
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One hundred and fifty six Ga-67 scans were performed in 44 patients with malignant lymphoma from Sept.1974 to Oct.1979. Seventy eight percent of untreated patients showed positive scans. Negative scan increased in number after treatment.In 119 studies on treated patients,53 studies(45%) showed negative scans.Seventy eight percent studies (65%) were positive on the treated patients with clinically detectable tumor.As much as 25% of the studies were proved to be false negative.This fact should be regarded as the cause of the unfavorable limitation of this study.The causes of the false negative studies were as follows; modifications by irradiation and chemotherapy,superimposing the physiological uptake,meningeal infiltration, pleural involvement,and too small tumor size. On the other hand,incidence of false positive scan was 10%,and positive scans were thought to be more reliable and effective in detecting the tumor recurrence. The causes of the false positive studies were as follows;physiological uptake,inflammation, and unknown reasons. We conclude that Ga-67 scan study is a useful method in management of malignant lymphoma,and we hope this study should be done at least every 6 months even in remission period.

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POTENTIAL USE OF GA-67 UPTAKE RATIO IN DETECTION OF SMALL PULMONARY CANCER LESION. T.Higashi,H.Wakao,A.Shimura,M.Kanno,H.Kato,S.Tani,J.Fukushima,K.Nakamura and H.Kato. Kanagawa Dental College,Inst.Medical Science Tokyo University,Yokosuka Kyosai Hospital and Yokohama Keiyu Hospital. Yokosuka,Tokyo ,Yokosuka and Yokohama.

The small pulmonary cancer lesion of approximately 2.0-3.0cm in diameter could be detected by Ga-67 scintigram. However, clinically it is necessary to detect smaller tumor than 2.0-3.0cm diameter. For this purpose, we tried to externally measure the Ga-67 accumulation of small pulmonary lesion with scinticamera.

According to this method, it is possible to detect smaller cancerous lesion than with the imaging method with the scinticamera. The study population consisted of 20 patients whom presented a variety of nodular or diffuse shadows on chest X-ray. Ga-67 citrate(2.0-3.0mCi) was administered intravenously 48 hours before use of the scinticamera. The Ga-67 accumulation in abnormal shadow(T) and the corresponding normal region(N) of the opposite lung were measured with the scinticamera utilizing the next formula. $Up = (T - N) / N$ The Up value of 5 patients with adenocarcinoma was 0.14-0.18, whereas that of 10 patients with nonactive chronic inflammation was -0.14-0.18, and that of 5 patients with active inflammation was 0.21-0.80.

This method appears to be a valuable tool for differential diagnosis in patients with small lesion found in routine chest X-ray.