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EVALUATION OF GA-67-CITRATE AND Tl-201-CHLORIDE SCANS IN PRIMARY LUNG CANCER. T.Togawa, K.Kimura, T.Kida Department of Radiology, Fukushima Medical College, Fukushima Health Administration Center, Nippon Telegraph and Telephone Public Co. Fukushima

Ga-67-citrate and Tl-201-chloride scans were performed on 22 cases with primary lung cancer (7 adenocarcinomas, 6 epidermoid carcinomas, 5 large cell carcinomas, 4 small cell carcinomas). Scintigraphic findings were classified as: (++) definite abnormal activity, (+) abnormal activity, (-) no or suspected activity, and (++) or (+) were defined as scan positive. 20 cases were positive either on Ga-67 or on Tl-201 scan, as compared with 19 cases were positive on each scan. Therefore the sensitivity was 86.4% on each scan and 91% on both scans. In epidermoid carcinoma, the sensitivity on Ga-67 was 100%, and 83.3% on Tl-201. In adenocarcinoma, the sensitivity on Ga-67 was 85.7%, and 100% on Tl-201. In large cell carcinoma, the sensitivity was 60% on each scan and in small cell carcinoma was 100% on each scan. Comparing with the findings of both scans, the degree of accumulation of Ga-67 was higher than those of Tl-201 in 14 cases (6 epidermoid, 3 adenocarcinoma, 2 large cell, 3 small cell), was equal to in 3 cases (2 adenocarcinoma, 1 small cell) and lower in 3 cases (2 adenocarcinoma, 1 large cell). 8 of 22 cases were irradiated (mean dose was 1750 rad) before each scan, but this irradiation did not affect the sensitivity of both scans. Ga-67 and Tl-201 scans were very useful in primary lung cancer.

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DIFFUSE PULMONARY CONCENTRATION OF RADIO-GALLIUM SCINTIGRAPHY. A.Asano, J.Hirose, S.Nishino, Y.Uekita, K.Hayasaka, Y.Kikuchi, H.Mitsuhashi and K.Amoh Department of Radiology, Asahikawa Medical College, Asahikawa

Diffuse pulmonary concentration of radiogallium was observed in 36 patients out of 441 scans (7.9%) in these two years in our hospital. The most common cause of diffuse pulmonary concentration was infiltrative disease (47%), followed by infectious (22%) and neoplastic disease (17%).

Chest radiograph-negative radiogallium-positive case was seen in the patient of the drug induced pneumonitis. Radiogallium was thought to be useful for the early detection of drug induced pneumonitis.

On the repeated scans there was significant improvement in the degree of diffuse pulmonary concentration after treatment—drug induced pneumonitis, pneumocystis carinii and hypersensitive pneumonitis.

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CLINICAL EVALUATION OF GALLIUM-67 UPTAKE IN HILAR AREAS OF PATIENTS WITH EXTRATHORACIC MALIGNANT NEOPLASMS. H. Kubota, A. Komatani and K. Yamaguchi Department of Radiology, Yamagata University School of Medicine. Yamagata

Gallium accumulation in hilar areas are often seen in patients with extrathoracic malignancies. The clinical records of 173 cases of hilar gallium uptake seen over 4 years period were reviewed. Seventy-five of these patients had extrathoracic malignant neoplasms. In 5 of the 75 patients, metastatic hilar nodes or masses were seen on the chest films, and in the other patients no abnormal hilar shadow was seen. In 38 patients, bilateral symmetrical hilar uptake was proved to be false positive by autopsy or observation for 6 months or more. Only one patient had developed bilateral hilar lymphnode enlargement one year after the gallium scan. In this patient, it may be said that hilar accumulation of gallium did not indicate the presence of hilar metastasis at the time of the examination. Although in 19 of the 75 observation period was within 6 months, hilar lymphnode enlargement was not detected in any of the patients during the observation.

If hilar lymphnode enlargement is not seen on the chest film, bilateral symmetrical hilar uptake may be almost always false positive in patients with extrathoracic malignant neoplasms, and gallium-67 scintigraphy is not useful for searching hilar metastatic lesions.

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GLUCOSE METABOLISM OF LUNG CANCER AND THERAPY. T.Suzuki, Y.Tokai, N. Yamauchi, M.Iio Department of Radiology, Nakano National Chest Hospital. Tokyo

C-11 labeled glucose was produced in Lifton's photosynthesis and C-11 glucose was given in 76 patients (45 lung cancer, 14 tuberculosis, two teratoma one Hodgkin's disease and 14 other benign diseases.) The high uptake of C-11 glucose was observed in 42 lung cancer, two teratoma and Hodgkin's disease. In other benign disease, we could not find any uptake of C-11 glucose. The high uptake of C-11 glucose showed high glucose metabolism rate of cancer, because cancer consumed more glucose 5-10 times than normal tissue. Regional therapy; for instance radiation, regional injection of antimetabolic agents; fell glucose metabolism of cancer, but general medication didn't fall cancer metabolism.