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STUDIES ON BONE METASTASIS OF PULMONARY CARCINOMA AFTER OPERATION. T.Sasazawa, S.Katagiri, K.Sugiki, A.Koyama and M.Wada. The Research Institute of Tuberculosis Hospital, Kiyose.

Bone metastasis is one of the most important prognostic factors of pulmonary carcinoma after operation. 125 cases (69 adenocarcinoma, 43 squamous cell carcinoma, 7 small cell carcinoma, 6 large cell carcinoma), who had been operated under the diagnosis of pulmonary carcinoma without distant metastasis, were studied on frequency and the time interval of appearance of bone metastasis after operation in correlation with their cell types and pathological stages. We also analyzed serum CEA levels at the recurrence.

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LIVER AND BONE SCINTIGRAM IN PATIENTS WITH SMALL CELL LUNG CANCER.

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We have carried out the liver and bone scintigrams to 107 patients with small cell lung cancer, and have divided to liver scintigram positive and negative groups, and also bone scintigram positive and negative groups. We studied response rate and survival between in those four groups respectively.

Results: The positive rate of liver and bone scintigram were 33% and 37.8%, respectively.

There was no significant difference between liver scintigram positive (63.6%) and negative (67.2%) groups. Complete response (CR) rate in liver scintigram negative group was 17.9%, in contrast, CR rate in positive group was null. We have obtained the similar results from bone scintigram analysis. Response rate in bone scintigram positive and negative groups were 64.9% and 67.2%, respectively. CR rate in bone scintigram negative group was 18%, in contrast, CR rate in positive group was 2.7%.

Almost same median survival (32 weeks) have been observed in liver scintigram positive and negative groups. Also there was no significant difference of median survival between in bone scintigram positive (32 weeks) and negative (33 weeks) groups.

Out of 68 patients who were carried out liver scintigram and CT scanning simultaneously, 10 patients could be detected liver metastasis by using liver scintigram.

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FUNCTIONAL IMAGING OF REGIONAL VENTILATION AND PERFUSION IN PATIENTS WITH LUNG CANCER

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Krypton-81m and Xe-133 ventilation studies and particulate perfusion studies were performed on 40 patients with primary lung cancer. Functional images of the ventilation-perfusion ratios and the mean transit time of Xe-133 were then obtained through computer analysis. In addition, an overall lung function test and arterial blood gas analysis were carried out on the same day.

\dot{V}_A with Kr-81m during tidal breathing expressed as the percentage of tumor-bearing lung to total lung correlated significantly with %VC ($r=0.868, p<0.005$). Likewise, there was a significant correlation ($r=0.713, p<0.005$) between %VC and \dot{Q} with Tc-99m MAA. The correlation coefficient between the relative mean transit time of Xe-133 and FEV₁ was -0.433 ($p<0.1$).

Ventilation and perfusion in the affected lung showed no significant difference between UICC • TNM stages I and II. In stages III and IV, however, regional ventilation and perfusion decreased significantly.

The \dot{V}_A / \dot{Q}_C distribution was calculated from the functional image of the ventilation-perfusion ratios in 17 cases with lung cancer. Four types of \dot{V}_A / \dot{Q}_C distribution were found: Type I (a pattern with nearly normal distribution) was observed in 8 of 17 cases, Type II (a pattern with a dead space-like effect) was seen in 7 cases, Type III (a pattern with a shunt-like effect) was seen in one case, and Type IV (a pattern with both a dead space-like and shunt-like effect) was found in the remaining case.