Pulmonary Arterial Blood Flow and Prognosis in Patients with Primary Lung Cancer

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Pulmonary arterial blood flow was evaluated by means of lung scans quantitatively in forty-six patients with pulmonary lung cancers. The obtained results were as follows.

1) Among the 36 cases of hilar lesions, lung scan changes were disproportionately larger than the x-ray abnormalities in 24 cases (67%), and proportionate in 12 cases (33%). Of the ten cases of peripheral lesions, the changes on the scans were proportionate to the x-ray findings in 8 cases (80%).

2) Decrease of pulmonary blood flow was more significant in cases in advanced clinical stages (Stage III, IV) than those in early stages (Stage I, II).

3) Survival times in patients with primary lung cancers following radiation therapy are affected by the severity of decreased pulmonary blood flow before treatment.

4) In seventeen cases, scans obtained after the radiation therapy were compared with the pre-treatment scans. At the end of radiation therapy, arterial blood flows were restored to the lung made ischemic by tumor in 13 of 17 cases (76%).

Effects of Bronchography on Pulmonary Perfusion and Lung Function (II)

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The purpose of the study is to assess the effects of unilateral bronchography on pulmonary function by using four different contrast media; namely, Urokolin, Dionosil (aqueous), Dionosil (oily) and Hytrast.

Fourty-one patients with various chest diseases, were subdivided into 4 groups and on each group was performed unilateral bronchography by using one of the contrast media. Perfusion lung imaging, flow-volume curves and chest radiography were done before, immediately, 4, 24, 48, 72 hours and one week after unilateral bronchography. $^{99m}$Tc-MAA was injected for perfusion lung imaging except at 4 hours after the procedure when $^{131}$I-MAA was used.

Ipsilateral perfusion decreased most markedly immediately after bronchography and gradually recovered in 24 to 48 hours. Influence on $V_{25}$ and $V_{25}$ (maximal expiratory flow rate at 50% and 100% of vital capacity, respectively) was the greatest, indicating that the small airways were affected most seriously. It was especially so when either Hytrast or Dionosil oily was used as a contrast medium. It took longer than 72 hours for recovery...