cluded are: a) reduced caliber of extra-alveolar vessels narrowed by increased interstitial pressure as a consequence of decreased expansion of dependent lung; b) increased sensitivity of dependent pulmonary blood vessels to vasoconstrictors; and c) hydrostatic effect of lymph in perivascular spaces (*2*).

We did not perform breathholding studies at TLC in our normal subjects and cannot add to the interesting comparisons of Jones, Sproule, and Overton regarding regional ventilation-perfusion ratios with tidal breathing vs breathholding.

JAMES E. WILSON III
LINCOLN J. BYNUM
MURUGAPPAN RAMANATHAN
University of Texas Health Services Center
Dallas, Texas

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Gallium-67 in Primary Lung Carcinoma

The article by Thesingh et al. (*1*) suggests that gallium is concentrated to a less extent by adenocarcinoma of the lung than by other types of primary lung carcinoma, on the basis of three patients. I feel that this is an inadequate number of patients studied to warrant such a conclusion. A review of 272 patients with lung cancer for whom the cell type was available, and who had had a gallium scan, showed that the sensitivity for squamous carcinoma, bronchoalveolar and adenocarcinoma, small cell carcinoma, and large cell undifferentiated carcinoma ranged from 88 to 95%, with no significant differences between cell types (*2*). This somewhat larger series contradicts the article of Thesingh et al.

EDWARD B. SILBERSTEIN
University of Cincinnati
Cincinnati, Ohio

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Reply

With reference to Dr. E. B. Silberstein's letter regarding our article (*1*), I have the following comments.

We did not suggest that adenocarcinomata of the lung (the tumors as a whole) concentrate gallium to a less extent than other types of lung carcinomata. In this small series of cases we did not have sufficient data to draw this conclusion, certainly not from the scintigraphic images. Moreover, gallium scans do not provide information about the quantitative concentration of gallium in the tumors, but only whether there is sufficient radioactivity in the tumor to be detected by scintigraphy. In a large series of patients, it was indeed shown that gallium scans of lung adenocarinomata are positive as frequently as scans of other types of lung carcinomas; however, no information was provided about the quantity of Ga-67 within the tumor or the distribution of Ga-67 in specific tumor cells, cells of inflammatory processes in or around the tumor, etc.

In our series we demonstrated significantly less gallium in the specific tumor cells of adenocarcinoma (which constitute a varying part, sometimes even a relatively small part of the tumor) than in other types of carcinoma and more radioactivity in tumor cells than in inflammatory cells. To our knowledge this has never been described. In addition we found a parallel between the Ga-67 concentration by tumor cells, the scintigraphic image of the tumor in the patients and the radioactivity in aliquots of tumor. No significance, however, can be attributed to the results of the last two methods separately because our series was too small. Since both autoradiography and collection of quantitative data from autoradiograms are very time-consuming processes, our series was of necessity small.

C. W. THESINGH
University of Leiden
Leiden, Holland

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