

Studies on the Scintigram of Irradiated Lung by Means of ^{131}I -MAA

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Phantoms designed to resemble the lung of rabbit in shape were filled with ^{131}I solution ranging from 20 μCi to 80 μCi .

Difference between both sides of the lung on scintigram was found when the contents of one side exceeded 6 μCi the other side. The ratios of the counting scores using cylindrical hole of 0.5 inch in diameter were measured at the center of each lungs. The values of the ratio 1.2 or 0.8 were measured in the case in which the difference on scintigram was noticed.

One side of the rabbit lung was administered single irradiation of 4000R or 6000R (160VP, 130R/m.) and compared to the other side by

radiogram, scintigram, and the ratio as described above.

As the preliminary experiment, difference of left and right lungs in MAA capture was measured to reveal the left lung being larger in this capture.

The capture was increased following 2–3 days of irradiation until 10 days (4000R) or until 5 days (6000R) from which it was decreased to attain normal value at 30 days.

Hyperemia of the lung following irradiation was considered to be the cause of the increase in the capture. There was no finding on radiograms in the course of the experiment.

A Study on Lung Scintigrams with ^{131}I -MAA

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Since megavoltage equipment has been available, the doses employed in radiotherapy of malignant tumors of the breast have increased and 6,000 rads or even higher have become common. The incidence of pulmonary fibrosis has increased at the same time.

In this study, first of all, the telecobalt

gamma irradiation ranging from 2,000 to 8,000 R. was performed to the portion of right lung in 30 adult rabbits.

Both lung scintigrams and chest films were studied every week.

Secondarily, radiation effects were observed histopathologically.

Study on the Shift Ratio of Pulmonary Blood Flow in Right or Left Lateral Positions: Application of ^{131}I -MAA Pulmogram

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We have been using ^{131}I -MAA pulmogram method to estimate the relative amount of pulmonary blood flow to bilateral lungs since

1965. This method requires a slit type collimator that is attached to the probe of the scintiscanner (3×2 inches crystal).