Transthoracic impedance pulse was recorded between subclavian region and supradiaphragmatic region of each thorax. Lung perfusion image was obtained 2 mins. after the injection of 5 mCi of $^{99m}$Tc MAA. Lung perfusion scanning and recording of impedance pulse was performed one week before and immediately after the bronchography in 15 cases having various lung disease. Distribution of blood flow was calculated from count rate measured on both the lung fields. Ventilation was also studied separately on each lung by impedance method or $^{133}$Xe inhalation method.

After bronchography, blood flow calculated from MAA distribution was decreased 10–80% of control in the lung in which contrast material was injected. Impedance pulse also decreased its amplitude after bronchography.

There was disparity between results obtained by perfusion scanning and impedance method in three cases. This disparity was caused by the pulsatile impedance change depending mainly on change of compliance of blood vessel and also by the difference of the detecting level of the vascular system.

Decrease of ventilation was correlated well with decrease of perfusion in the lung in which bronchography was performed.

Quantification of Lung Scintiscans in Pulmonary Emphysema

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In order to quantify the uniformity of lung scintiscans in pulmonary emphysema, following non-uniformity points were estimated from contour plots which were obtained from $^{131}$I-MAA photoscintiscans in 38 patients, using Sakura Isodensity Recorder PDI-10 installed the defuser. Each line of the contour plots represented approximately 10% decrements in activity from the high center, and nonuniformity points were calculated based on differences in distribution between a subjects’ right and left lungs and nonuniform distribution within a lung, acording to Kronenberg with some modifications.

Although the nonuniformity points such obtained appeared to have no evident relation to radiological vascularity pattern, that is the arterial deficiency pattern or the increased markings pattern, and had no correlation with RV/TLC nor with single breath $D_{LCO}$ of the patients, it significantly correlated negatively with their FEV$_1$% and coresponded to each stage of the severity of pulmonary emphysema in respect to blood gas disturbance.

This would suggest that the presented method was appreciate for assessment of uniformity of the distribution of lung perfusion in pulmonary emphysema.