

G. Lung, Heart and Blood Flow

Scintiphotography of the Apex of the Chest (Apical Scintigraphy)

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Apical scintiphotography is applied to the examination of the apex of the chest in order to study the changes of the apex following irradiation for the post operative breast cancer.

Apical scintiphotogram is taken after injecting ^{99m}Tc -MAA of 3-5 mCi intravenously in the patient's sitting position with the scinticamera angled 30° to the patient's back.

Apical scintiphotography is superior to the apicolordotic radiographic view of the apex of the chest in order to show the changes following irradiation. The usual scintiphotography in the frontal and back views of the chest shows no apparent changes in the apex in the early stage after irradiation.

Physiological Implication of 133-Xenon Washout Delay from Lung

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Upon reviewing more than fifty cases with various pulmonary diseases studied with 133-xenon and scintillation camera, the image of 133-xenon washout delay from lung was appeared to be most sensitive in compared to the other images such as ventilation (\dot{V}) after single inhalation or perfusion (\dot{Q}). While regional washout delay from lung indicates regional ventilatory abnormalities anyhow, it is thought to be caused either from high resistive state especially at central airway or from loss of distensibility of lung according

to the RC theory of Otis.

The case with high resistance at central airway was typically exemplified by the case with bronchial stenosis due to broncogenic cancer or spasmodic asthma where the prominent washout delay as well as hot spot formation at aerosol scanning was shown to be characteristic. According to the non-linear characteristics of the compliance curve, lowered distensibility of lung might be caused either at high lung volume, which is a state of overinflation, or at low lung volume due to