## 1349

STUDIES OF VENTILATION AND PERFUSION IN
RABBITS WITH EXPERIMENTAL PULMONARY
EMBOLISM.    I. Narabayashi, H. Terashima,
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Ventilation and perfusion studies were
performed on 48 rabbits with experimentally
produced multiple pulmonary emboli formed
from thrombin, lipiodol ultrafluide,gelfoam,
ivalon, iron powder and VX-2 cancer.  The
emboli of thrombin and lipiodol had com-
pletely disappeared from perfusion images
after 24 hours.  Those from combined in-
jection of ivalon and iron powder persisted
perfusion defects scintigraphically after
24 hours.  Immediately after the emboli-
zation, Xe-133 washout study was begun with
the intravenous injection of dissolved
xenon.  Thereafter, perfusion images were
obtained using Tc-99m MAA.  In areas of
absent blood flow temporary abnormality of
ventilation was detected as delayed xenon
clearance, showing bronchoconstriction.  In
rabbits with diffuse oily microemboli, the
washout studies after equilibrium breathing
of xenon gas demonstrated remarkable delay
in clearing the gas from the whole lung.
Perfusion images showed the fissure sign as
a linear area of decreased radioactivity
which corresponds to the interlobar fissure.

## 1350

SCINTIGRAPHIC DIAGNOSIS OF PULMONARY EMBO-
LISM.   N. Uehara, J. Fujioka, M. Shigeyasu,
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Perfusion lung imaging is a safe and
simple means of detecting pulmonary embo-
lism (PE).  We experienced 9 cases of PE in
the past three years.  Two were complicated
with pulmonary infarction.  In 7 out of 9
cases, emboli were located in more than two
lobes.  Perfusion defects were segmental or
subsegmental, triangular in shape, and
distributed in all lobes, most frequently
in LLL, and RML.  Additional embolus was
found in 4 cases.  Kr-81 studies of
regional ventilation and close observation
of chest X-rays revealed little or no
change in the area of perfusion defects,
except in that of pulmonary infarction.
A retrospective analysis was performed
in 52 patients who presented obvious per-
fusion defects in MAA-TC-99m studies.
Though segmental or segmental-like defects
were recognized in various diseases,
meticulous observation of X-P disclosed
abnormal shadow which matched the perfusion
defect.  Asthma, bronchial stenosis and
some of COPD, fibrotic change, small bulla
and hilar tumor showed only slight change
in X-P, but disclosed V/P match.  Aortitis
syndrome, Becet disease and peripheral PS
showed V/P mismatch, and could not be
distinguished from PE by scintigraphic
examinations.

## 1351

PULMONARY PERFUSION IMAGE IN VENTRICULAR
SEPTAL DEFECT:EVALUATION IN CONSIDERING PUL-
MONARY HYPERTENSION.   F. Nakanishi, T. Kas-
uga, T. Kobayashi, H. Sida, K. Inokawa, S.
Takamoto and K. Hirano   Department of Radi-
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Eighty six patients with ventricular sep-
tal defect were classified into three groups
according to the grade of pulmonary arterial
pressure. Group 1; $Pp/Ps < 0,45$, group 2;
$0,45 \leq Pp/Ps < 0,75$, group 3; $Pp/Ps \geq 0,75$.
Left/Right ratio was calculated in computer
processing image of posterior view.
 Decreased perfusion of the left lung was
seen in 24 of the 31 cases of group 3, in
13 of the 24 cases of group 2 and in 2 of
the 31 cases of group 1. Bilateral irregular
accumulation and perfusion defects were ob-
served in patients with $Pp/Ps$ ratio $\geq 0,6$.
An inverse correlation was found between
$Pp/Ps$ ratio and L/R ratio in 42 patients
with $Pp/Ps$ ratio $< 0,6$. In 44 patients with
$Pp/Ps$ ratio $\geq 0,6$, the correlation was poor.

## 1352

ESTIMATION OF POSTOPERATIVE RESPIRATORY
FUNCTION BY PERFUSION SCAN.    T. TAKAO, T.
KITANO, Y. FUKUNAGA, T.NAKASUJI, S. KIMURA,
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We studied whether postoperative venti-
latory functions, such as FVC, %VC, $FEV_{1.0}$
and $FVE_{1.0}$%, of lung cancer cases can be
predicted by estimation of perfution
scanning. Perfution scintigrams were
obtained with scinticamera after intravenous
administration of 2mCi TC-99m MAA. The
scintigram was divided into four ROI's by
median line and by horizontal line at the
hight of 3rd intracostal space. Estimation
was made by counting each ROI and following
calculation:

predictid FVC etc.=observed FVC etc.

$$\times \left[ 1 - \frac{\text{counts of ROI(region of operation)}}{\text{total count}} \right]$$

Predictid ventiratory functions were com-
pared with those observed in every cases of
pneumonectomy or lobectomy.Both values were
coincident significantly. As a result of
these observations, we see that our esti-
mation for the postoperative respiratory
functions by perfution scan is clinically
available.