507 BRAIN IMAGES OF ARTERIO-VENOUS MALFORMATION (AVM) WITH IMP.
H.Pujie,T.Tsujimoto,S.Chin,Y.Nagamoto,
H.Yamamoto,Y.Tsukazaki,N.Shirakata*,
N.Sone**,A.Hakuba**,S.Shimamura**,
H.Ochi***,Y.Onoyama**,Tsukazaki
Hospital,Yamamoto-Dusan Hospital*,
Departments of Neurosurgery** and
Radiology***,Osaka University Medical School.

Single photon emission computed tomography (SPECT) with N-isopropyl-p-I-123
idoamphetamine (IMP) was performed for
three patients with cerebral AVM and for
a patient with dural AVM associated with
the left parietal subcortical hemorrhage. Tomographic images (three slices at one time)
of all patients were obtained immediately
after an intravenous administration of
IMP. The collection time of the data was
15 minutes by HEADTOME-II with high resolution mode. In three cases of cerebral AVM, 
radius and draining vein of AVMs were shown
as the low activity area, while these areas
were shown as the high rCBF with Xe-133
inhalation study. In a case of dural AVM
luxury perfusion was found around the
hematoma 7 days after the onset. High
accumulation of IMP was seen in the area of
luxury perfusion by Xe-133 rCBF study. The
area of intracranial draining vein was
shown as a defect.

508 COSMOPARATION BETWEEN VENTILATION PERFUSION RATIOS USING SPECT AND VENTILATION PERFUSION RATIOS USING CONVENTIONAL LUNG SCANS.
Hyogo Medical College,Nishinomiya.

Ventilation perfusion imaging using SPECT
was performed in the supine position on a
healthy subject and one patient with pulmo-

509 APPLICATION OF SINGLE PHOTON EMISSION CT FOR CARDIAC POOL SCINTIGRAPHY IN MYOCARDIAL INFARCTION. T.Watanabe,Y.Naito,T.Goto,N.Ikebe,
N.Akaba,Y.Kobayashi,S.Abe,Y.Goto,H.Minami,
Y.Nagai,I.Yamagishi,C.Ibukiya,
The 2nd Dept. of Intern. Med. & Radiol.Tokyo Medical college, Tokyo.

This study was performed to evaluate the usefulness of Single Photon Emission CT(SPECT) compared with conventional cardiac pool studies. Five normal volunteers and 14 cases of myocardial infarction were studied. The subjects received I.V. injections of RBC labeled in vivo with Tc-99m, and the SPECT data was obtained after first pass data and equilibrium data were obtained. The SPECT method was performed using a high resolution parallel hole
colimeter, and ECG gated SPECT data was ob-
tained rotating the gamma camera from LPO 50
to RAO 40 by 30 sec./5, then sagittal, coronal
and 4-chamber view images were reconstructed and compared with the conventional FP and EQ method in respect to wall motion, amplitude
and plane delay.

All abnormal findings, that could be obtained by conventional method, could be detected by the
SPECT method, and even more detailed abnormal findings that were not obtained by conventional methods revealed by the
SPECT method. Especially the sagittal images which were difficult to evaluate accurately by
conventional methods could be evaluated more accurately by the SPECT method.

510 MEASUREMENT OF LEFT VENTRICULAR VOLUME USING GATED BLOOD POOL EMISSION COMPUTED TOMOGRAPHY.
T.Ichikawa,Y.Yamaizumi,M.Kakino,Y.Putagami
T.Konishi,T.Kamata,H.Maeda and
T.Nakagawa*, 1st Dept. of Intern. Medicine and
Radiology*, Mie University School, Taub.

Left ventricular (LV) volume was measured by gated blood pool emission computed tomography (ECT) and was compared with LV volume by biplane LV cineangiography (LGV).

ECT and LGV were performed within 2 weeks in 2 normal, 3 angina and 15 myocardial
infarction. The ECT images were acquired with multigate method (14 frame a beat) in 64x64 matrix using rotating dual head gamma camera after in vivo labelling 25 mCi Tc-99m
-RBCs. Acquisition generally took 10 second
every 6 degree. And subsequently sagittal (long axis) images were reconstructed at a
slice thickness 5.4mm. The borderline between LV and left atrium was dicided with
functional image by Fourier analysis. LV volume was calculated using the following equation:
LV volume = number of matrix in LV X volume of 1 matrix (5.4mm³).

When the edge of LV was dicided at 65% of LV maximum count, LV volume with ECT co-
correlated well with LGV (Y=0.95X+5.3, r=0.98).

A good correlation was observed between
end-diastolic volume(EDV) by ECT and EDV by
LGV (Y=0.94X+10.3, r=0.95). Underestima-
ted end-systolic volume with LGV in cases
with small volume (Y=0.79X+19.4, r=0.95).

We conclude that ECT is useful method to
determine LV volume reasonably.