307

AUTOMATIC DIAGNOSIS OF THE SITE OF MYOCARD-
IAL INFARCTION WITH SPECT. Y. Sekiai, M. Sawai,
S. Murayama, T. Tanno, A. Mikuniya, K. Onodera,
K. Nishizawa·, K. Okamoto··, H. Kamata··,
2nd Dep. of Int. Med., Hirosaki Univ., ·Dept.
of Radiol., Hirosaki Univ., ··Dept. of Int.
Med. and Radiol., Hirosaki Municipal Hospital
, Hirosaki

In order to diagnose the site of myocard-
ial infarction, we sturdied relation between
the site of infarction and coronary artery
, and program of diagnosis was developted. We
sturdied 30 patients with myocardial infarc-
tion. (16 patients with LAD lesion, 6 patients
with LCX lesion, 8 patients with RCA leision)
. Circumferential profile curve was created
in 10 shortaxis sections with SPECT, and we
devised the infarction map. Coronary perfusin
territories were determined by mean infarct-
ion area in each sections. Territory map was
developed by this method. LAD territory was
overlaped in apex and anteroseptal with RCA
terrtory. LCX territory was overlaped with
LAD and RCA territory. The infarct size was
60% in LAD lesion, 19% in LCX lesion, 40% in
RCA lesion. Automatic diagnosis was done by
this territory map. Wheras LAD lesion was
devided 2 groups (group 1 : proximal lesion to
1st diagonal branch, group 2: distal lesion).
The deference was lateral wall infarction in
two groups. We conclude that this diagnotic
program may be useful in deferential diagno-
sis of coronary artery leision.

309

REEVALUATION OF DIAGNOSTIC ACCURACY FOR
ISCHEMIC HEART DISEASE BY ELECTROCARDIO-
GRAM AND TL-201 MYOCARDIAL IMAGING(PLANAR
AND SPECT). S.Nabeyama, M.Aoki, Y.Yamamoto,
T.Ashihara, I.Ogata, T.Inou and T.Fukuyama.
Cardiology, Matsuyama Red Cross Hospital.

Coronary arteriogram was performed in
136 suspected ischemic heart disease pat-
ients. In 50 normal, 41 angina pectoris and
45 myocardial infarction, sensitivity(SE)
and specificity(SP) of the electrocardio-
gram(ECG), planar and tomographic(SPECT)
Tl-201 scintigram for the detection of
coronary artery disease (more than 51%
stenosis) were analyzed. SE of ECG, planar
and SPECT in myocardial infarction group
were 88,95, and 98% and SP were 89,80 and
59% respectively. In the group of angina
pectoris, each SE was 78,61,81% and SP was
80,100,90% respectively. Thus, high SE of
ECG and Tl-201 imaging using nonreversible
defect for the detection of myocardial
infarction was noted, although SP of the
SPECT was low. In the tomographic imaging,
false positive diagnosis for infero-
posterior infarction was frequent. SE in the
group of angina pectoris was lower than that
in myocardial infarction, since the
diagnosis of angina pectoris using
reversible defect was difficult in some
cases with mild coronary stenosis(51-75%)
or those with old myocardial infarction.

310

QUANTITATIVE ESTIMATION OF RIGHT
VENTRICULAR ACCUMULATION BY Tl-201 MYOCAR-
DIAL SPECT.
E.Kunieda, K.Ogawa, I.Nishiguchi, H.Kumagai, A.
Kubo, J.sakurada, S.Hashimoto, S.Iwanaga, S.Han
da. Keio University School of Medicine,
Tokyo.

Correlation between Tl-201 right vent-
ricular accumulation shown in SPECT and
right ventricular systolic pressure is
evaluated in patients with 12 right
ventricular overload disease and 7 normal
right ventricular pressure. On a short axis
slice of about 20mm thickness, polygonal
roi are chosen so as to include as much
myocardial wall as possible. The counts in
roi are divided by the path length of the
ventricular wall in the roi and the result
value show the average Thallium uptake per
path. Those suggest the degree of wall
thickness if it was supposed that the count
in roi represents the volume of myocardium.
Though other methods (box roi , maximum
count in the roi) ware done, as the result
, our polygonal roi method shows most ex-
cellent correlation (r= 0.88 with ASD and
r=0.96 without 2 ASD cases) to the values
of right ventricular systolic pressure.
Besides, especially in the case of compara-
tively mild right over load, the polygonal
method shows fairly good sensitivity and
clearly separate them from normal pressure
case. As a conclusion, Tl-201 myocardial
SPECT appears to be a sensitive technique
for assessing right ventricular
overloading.

311

EVALUATION OF PRESSURE OVERLOADING OF RIGHT
HEART VENTRICLE BY Tl-201 SPECT
H.Koide, Y.Yonekura, S.Yamaoka (Kyoto
University School of Medichine), K.Torizuka
(Fukui Medical College)

Tl-201 SEPCT is established as a useful
method to diagnose ischemic heart disease
and many investigators have recently
reported it is indicative of the assessment
of cor pulmonale in chronic obstructive
pulmonary disease(COPD).
In our study, we defined the ratio of
activity in right to left ventricular wall
as Tl-index and compared it with the
results of cardiac catheterization and
blood gas analysis, and RVEF measured by
Kr-81m method.
Statistically it was revealed that
Tl-index was positively correlated well
with pressures in pulmonary artery and
right ventricle and negatively with
RVEF(r=-0.79, n=18) and not correlated with
blood gas data.
Therefore we confirmed that RV
overloading coud be evaluated by Tl-201
SPECT and concluded that it was a
noninvasive method suitable for follow up
study.