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RETROSPECTIVE COMPARISON OF RADIONUCLIDE
SCANS AND COMPUTED TOMOGRAPHY (CT) OF LIVER
CIRRHOSIS BASED ALTERATIONS OF THE CAUDATE
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Radionuclide examinations and CT of the liver in 58 patients were compared retro-
spectively to evaluate their value as di-
nostic tests and as indicators of morphol-
ogical changes.

In cases of cirrhotic liver, the right
lobe exhibited relative shrinkage, while the
caudate lobe underwent enlargement. Radio-
uclidean scans and CT of 35 proved cirrhotic
livers, 5 hepatoma with cirrhosis, 4 cases
of chronic hepatitis, 4 liver cysts and 10
normal livers were analyzed using the left to
right lobe width ratio in the anterior view (RI)
and the caudate to right lobe width ratio (CT).
CT scans were examined in order to accurately identify the main portal vein.

The two ratios were well correlated and
a linear relationship was found to exist be-
tween them, except in cirrhosis with atrophy
of both lobes (r=0.69 p<0.05). Using the
two ratios, cirrhotic livers and cirrhosis
with hepatoma could be separated from non-
cirrhotic livers in cases of diffuse chronic
liver diseases.

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DIFFERENTIAL DIAGNOSIS OF JUXTADIAPHRAGMAT-
ic abnormalities by liver scintigraphy and
RI-angiography using Tc-99m Phytate.
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Kumano and O.Eishida, St.Mariana University School of Medicine,Kawasaki
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Sequential abdominal images with 5 sec
interval have been taken routinely in our
institute after i.v. injection of Tc-99m
phytate for liver scintigraphy. Usefulness
of the RI-angiography in combination with
liver scintigraphy for the differential di-
gnosis of juxtadiaphragmatic abnormalities
was evaluated in 76 cases including 14 in-
trathoracic, 45 intraabdominal and 7 intrahe-
patic lesions. Smoothness of upper margin
of the liver in liver scintigraphy indicates
extrahepatic lesions. Absence of cold
area between liver and lung with downward
deplacement of the liver are characteristic
to emphysema and cardiomegaly. Eventra-
tion can be diagnosed by intrathoracic pro-
trusion of the liver. Perihepatic halo is
seen in massive ascites. Diminished lung per-
rusion and disappearance of costophrenic
angle in RI-angiography indicate pleural
effusion. Intrahepatic lesions show concave
focal defect in the liver margin, of which
vascularity can be assessed by RI-angiogra-
phy.

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A NEW MEASUREMENT METHOD OF PROPORTION
OF BLOOD SUPPLY BETWEEN HEPATIC ARTERY AND
PORTAL VEIN (P/A RATIO) WITH XE-133.
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When radioactive Xe-133 is administered
intravenously, most of it is eliminated
from the lung. Only a small part of it
passes through the lung and flow into the
liver and other organs. By use of the tracer
in the liver, we were able to determine the
hepatic circulation. Patients with liver
diseases were studied before eating, after
eating and after exercise. First, 20mci of
Xe in 1 M saline solution were flushed into
the antecubital vein. And the course of
activity through the lung to the spleen and
the liver, was detected by a gamma scin-
tillation camera for 10 minutes and simul-
taneously recorded on a digital magnetic
tape. From the time activity curve, by
mathematical treatment, radioactivity of the
input was determined, which had usually two
peaks; the first was considered to be related
to the blood flow mainly via the hepatic
artery, the second to that via the portal
vein. There is a predominant decrease of
P/A ratio in cirrhotic patients. After
dieting, there was a marked increase in the
portal blood flow. After exercise there
was a marked decrease in the portal blood
flow.

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HEPATOBILIARY SCINTIGRAPHY USING Tc-99m
LABELED COMPOUNDS; AN EVALUATION OF
CONGENITAL BILIARY ATRESIA AND NEONATAL
HEPATITIS. Y.Ichiya,S.Yakabe,Y.Oshiumi,
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Hepatobiliary scintigraphy using Tc-99m
labeled compounds(parabutyl IDA, Pyrro-
xyldene isoleucine and diethyl IDA) was
performed in 46 infants and young children
(57 studies); including the patients with 19
congenital biliary atresia(CBA), 11
neonatal hepatitis(NH) and 16 postoperative
CBA. Preoperative differentiation of CBA
and NH is important. In this series, 17
among the 19 CBA and 8 among the 11 NH
were correctly diagnosed by presence or absence
of bowel excretion of the radionuclide on
scintigraphic images. Two CBA were falsely
interpreted as having the bowel excretion
due to patients' motion. Three NH had no
bowel excretion, although they had the
patent biliary systems. Eleven(6 CBA and 5
NH) also received scintigraphy using I-131
Rose Bengal. In comparison with I-131 Rose
Bengal and Tc-99m labeled compounds, there
was no difference in bowel excretion
Scintigraphic findings in postoperative CBA
patients well correlated with their
clinical courses and patients having no
bowel excretion in scintigrams had poor
prognosis.