P. Pediatrics

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Tc-99m PHYTATE LIVER SCINTIGRAPHY AND CONGENITAL BILIARY ATRESIA.

H. Ishida, N. Ihara, Y. Nirasawa, I. Shima-

After the report of Kasai's hepatic port-
enterostomy the subject of treatment has
been changed from the surgical technique
to the management of secondary liver cir-
rhosis and portal hypertension in congenital
biliary atresia. Liver scintigraphies using
Tc-99m phytate have been performed as a
routine clinical study for detecting the
liver cirrhosis and portal hypertension.
The patients with CBA were divided in 3
groups, Group 1: the patient with no jaundice
and good bile flow postoperatively, Group 2:
the patient with jaundice and poor bile
flow, Group 3: the patient with jaundice
and no bile flow. Liver/Spleen Ratio calcu-
lated by liver counts/spleen counts of the
same area on posterior image was used to
detect the extent of liver cirrhosis, and it
has been kept relatively high level in Group 1,
but decreased under 0.7 in the dead cases
of Group 2 and 3. Low L/V ratio had the esophageal vari-
ces endoscopically, this Ratio was seemed
to show the extent of portal hypertension.

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FOURIER PHASE ANALYSIS IN PAEDIATRIC CARDIOLOGY. David L. Gilday. Department of Radiology, University of Toronto & Division of Nuclear Medicine, The Hospital for Sick Children, Toronto, Canada.

Fourier Phase Analysis has rapidly become
an integral part of Nuclear Cardiology.
In children the role of phase analysis is
not just useful in determining malfunc-
tioning areas of the ventricle but also in
assessing the exact portion of the image
which is ventricle. This is important in
congenital heart disease, either before or
after surgical correction, to help delineate
the atra and ventricles.

In conduction abnormalities the delay in
on set of contraction is readily evident.
Statistical analysis of the mean, variance,
kurtosis and skewness of the number of
pixels in any phase range is becoming a
useful indicator of the functional integ-
rety of the ventricle.

Applying the same analysis to non peri-
odic physiologic functions such as the
"First Pass" of the radionuclide through
the heart has potential advantages in
detecting abnormal flow patterns such as
ventricular septal defects with left to
right shunts. In the kidney the flow of a
tracer such as Tc-99m DTPA can be mon-
tored and the cortical, Medullary, Pelvic
and ureteral flow in the same phasis manner.

In the final analysis phase analysis
gives us a new function prospective of
changing physiologic functions.

2219

99m Tc DTPA scan compared to 99m Tc DMSA
scan in renovascular hyperon.
I. Gordon, R. de Bruyn, D.A. Stringer.

Paediatric patients with systemic hyperten-
sion are investigated extensively. 10 pa-
teins with renovascular hypertension have
undergone intravenous urography, abdominal
ultrasound, selective renal and inferior
cava venous renin sampling and arterio-
ography including selective renal arterio-
ography as well as both a 99m Tc DTPA scan
and separate 99m Tc DMSA scan. The diagno-
sis of renovascular hypertension has been
established on either the arteriographic
findings or on the selective venous renin
results or a combination of both.

Analysis of the DTPA scans include

1. Perfusion during the first 40 seconds
   of the whole kidney as well as segmen-
tal areas of kidney.
2. Whole kidney transit time analysis.
3. Differential renal function at 1 minute
   has been estimate.

The DMSA scans have been assessed solely by
visual analysis of the analogue images.i.e.
posterior and both posterior oblique views.
The results of these analyses will be pre-
sented showing that segmental renal patholo-
gy is only detectable on DMSA scans and that
the first imaging investigation of any pati-
ent with systemic hypertension should be a
99m Tc DMSA scan.

2220

Investigation of the Smal Lung
in Paediatrics.
I. Gordon. Ph. D.

This study evaluates the role of 81m Kryp-
ton ventilation/99m Technetium macroaggre-
gate (V/Q) lung scans in the small lung.
18 children were admitted for investigation,
each child underwent a barium swallow,chest
fluoroscopy and chest radiography; in selected
cases pulmonary angiography, bronchos-
copy and bronchography were undertaken.
There were 3 children with an absent pulmo-
ary artery, 2 children with lung aplasia,
2, with lobar aplasia, 1 child with Mele-
wood's syndrome, 10 with hypoplastic lungs.
In this group of children with hypoplastic
lungs, 2 sequestrated segments were diagno-
sed.

The V/Q scans when taken in conjunction wi-
the chest radiograph allowed accurate
diagnosis in all 18 children. V/Q lung scans
are an early essential investigation of the
small lung.