

Diagnosis of Diseases of the Bileduct in Children

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In order to determine the most suitable treatment involved, surgical or internal, some important diseases of the bileduct in newborns and infants must be differentiated. We think that examination by nuclear medicine should be performed first, because it can obtain important information and has few risks. I will mention some of these in regard to our experiences.

1) Congenital Common Bileduct Atresia (CBA) and Infantile Hepatitis; In many cases it is difficult to diagnose jaundice in infants and newborns. It is especially difficult to differentiate infantile hepatitis with clinical findings of obstructive jaundice, from CBA, because these two diseases sometimes have similar clinical and examinative findings. Moreover in cases of CBA, it is necessary to operate in less than 3 months of age. Therefore these two diseases must be differentiated as soon as possible. In 1965, we differentiated these diseases by means of drawing time activity curves of the heart, liver and intestine with the renogram after intravenous injection of ^{131}I -Rose Bengal. Probability of diagnosis by this method was around 80%. Since 1967, we have performed liver and bileduct scanning 30 minutes, 3 hours, 6 hours, 24 hours, 2 days and 7 days after intravenous injection of ^{131}I -Rose Bengal. We performed this method on over 100 cases of jaundice in newborns and infants. Those cases in which the images of the kidney obtained 24 hours and 48 hours afterwards, and in which there was no excretion of RI into the intestine,

we diagnosed as CBA. But there were a few cases in which scan images of the kidney in clinical infantile hepatitis were obtained, and probability of diagnosis was 95%. The infantile hepatitis in which scan images of kidney were observed were strongly obstructive, these become well by washing bileduct surgically. The findings of the examination were very useful in determining therapy. We did not observe kidney images in 100% of the cases by means of ^{131}I -BSP, and in this respect, our results were the same as Uchiyama's with CBA, so we think ^{131}I -Rose Bengal was useful. Furthermore, we want to emphasize that this method allowed us to discern the patients' condition after the operation.

2) Choledochal Cyst; Scanning of liver and bileduct should be performed first to diagnose this disease. Although the time that RI is excreted into the cyst differs according to the degree of liver dysfunction, this disease can be diagnosed if the image of the cyst is obtained by means of ^{131}I -Rose Bengal at regular intervals.

3) Other diseases; We experienced the following cases. The excretion of RI into the intestine was not observed and the image of the kidney was not obtained. Hence after operation we obtained the diagnosis as hypoplastic intra hepatic bileduct. We also used the RI examination on Siamese twins whose livers adhered to one another, and we confirmed their bile excretion systems.

S-4 Liver Function Test with RI Labelled Compounds

Determination of LP-X and LCAT Activity with (^3H) Cholesterol and its Clinical Significance

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Determination of lipoprotein X (LP-X) and lecithin: cholesterol acyltransferase (LCAT) activity were carried out in the sera of patients with liver

diseases with aid of (^3H) cholesterol.

LP-X is known to be present in sera of cholestatic patients. We determined LP-X concentrations to