

A hundred patients with suspected renal disease were studied by PHO/CON. Both CT and ECHO were applied to 14 cases and either CT or ECHO to 35. A  $^{99m}\text{Tc}$ -DMS (dimercaptosuccinate) was used for renal tomoscintigraphy. In patients with suspected renal lesions in the noncontrast CT study, a urographic contrast medium was injected intravenously for enhancement of visualization.

The kidneys were scanned in longitudinal planes by PHO/CON, in transverse planes by CT, and in free planes by ECHO.

Six cases are presented in details.

In detecting the renal space occupying lesions, scintigraphy by PHO/CON was the best screening examination of the three modalities, since the entire

organ was easily imaged. PHO/CON provided valuable information on renal functions, but permitted the least definitive evaluation of renal masses, especially in the nonfunctioning kidney.

CT and ECHO were more useful in distinguishing between a renal cystic disease and a solid renal neoplasm and in visualizing the cross-sectional anatomy.

CT had better resolving capability and less dependence on the operator than ECHO. The disadvantages of CT are a higher initial cost and exposure to radiation.

The effectiveness of ECHO was restricted by marked obesity and bowel gas, but it features a low cost and no radiation exposure.

### **Body-Background Defects in the Renoscintiphotos after Renal Transplantation**

Akira ISHIBASHI, Awato FUJINO and Shigeru IKEDA

*Department of Urology, School of Medicine, Kitasato University*

90 cases received renal transplants at Kitasato University Hospital last five years. All of them were studied with renoscintiphotos using  $^{99m}\text{Tc}$ -DTPA and  $^{131}\text{I}$ -hippuran. We have 4 cases of lymphoceles after transplantation. 3 cases of them were studied by both ultrasonography and renoscintiphography.

The ultrasonography revealed lymphoceles in all three cases. A lymphocoele locating outside the transplanted kidney cannot be detected by renoscintigraphy. Renoscintiphoto is not recommended as the first procedure when lymphocoele is suspected clinically. Ultrasonography seems to be more useful in detecting these complications.

### **Serial Radionuclide Studies for Evaluation of Renal Transplants**

Shiro SAGAWA\*, Michio ISHIBASHI\*, Masaaki ARIMA\*, Michiyuki USAMI\*,  
Takao SONODA\*, Tsunehiko NISHIMURA\*\* and Kazufumi KIMURA\*\*

*\*The Department of Urology, \*\*The Department of Radiology and Nuclear Medicine,  
Osaka University Hospital*

Radionuclide quantitative function studies for evaluation of renal allografts were performed on 11 patients. Twenty-four studies were made on various states (normal 12, acute rejection 7, chronic rejection 2, ATN 2, urinary obstruction 1) using  $^{99m}\text{Tc}$ -DTPA and  $^{131}\text{I}$ -hippuran.

For the dynamic studies, 10 mCi of  $^{99m}\text{Tc}$ -DTPA was injected intravenously as a rapid bolus and sequential images of the kidney were recorded every one second for 80 seconds using a gamma scintillation camera and on-line minicomputer

system (HITAC-10, 16 kW). Then, 300  $\mu\text{Ci}$  of  $^{131}\text{I}$ -hippuran was injected and serial images were recorded every ten seconds for 20 minutes in the same method. During these studies, several scintiphotos were also obtained using the polaroid camera.

RI dynamic curves were obtained from the region of interest in the kidney, displaying on CRT.

Analysing Tc-DTPA dynamic curves, five parameters were calculated: (A)  $T_{\max}$ , (B)  $T_{1/2 \max}$ ,