vided between right and left kidney according to the initial height of the transfer function of each kidney, which is assumed to be proportional to the blood flow.

Functional Image of the Kidney Using on-Line Minicomputer System in Obstructive Uropathies

*The Department of Radiology and Nuclear Medicine, Medical School, Osaka University
**The Department of Internal Medicine, Medical School, Osaka University
***The Department of Electric Engineering, Osaka University

Functional image of the kidney, the parametric map of the regional renal function were developed using 131I-hippuran sequential scintigram data. An Anger camera and on-line minicomputer system were employed for the data processing.

A dynamic curve in each element of the digitalized image was extracted and the pertinent parameters (T-max, C-max, UP SLOPE, DOWN SLOPE, and COMPARTMENT) were calculated to display as parametric map on a CRT.

In this study, 47 cases of obstructive uropathy including renal stone p-u junction stenosis etc, were studied using these functional imaging and were compared with the findings of renogram, renal scintigram, intravenous pyelography and laboratory data.

Classifications of obstructive uropathy were divided into 4 groups of hydronephrosis by I.V.P. (Oka, Otnes), 11 cases of dilated pelvis, 8 cases of atrophy of papillae, 16 cases of large global calyces, 8 cases of huge hydronephrosis.

In generally, in the case of hydronephrosis, significant delay of T-max and increase of number of COMPARTMENT were demonstrated at the hydronephrotic portion, especially, image of DOWN SLOPE in the hydronephrotic portion were expressed as defect, which the remaining cortex with normal excretory function is clearly discriminated from the impaired portion.

According to the degree of hydronephrosis (1-4), each parametric map showed the characteristic image which reflect clinical significance in obstructive uropathy, and the size and the degree of hydronephrotic change are estimated in the functional images. Moreover, the functional images of the hydronephrosis were proved to be useful for the evaluation of regional distribution of the renal function and were applied to the indication of operation of hydronephrotic patients.

Follow up by Using 99mTc-DTPA after Operation of Urinary Diversion with the Ilial Conduit and the Ureterosigmoidostomy

Kiyoshi KINEBUCHI* and Katsuya NAGASE**
*Department of Urology, School of Medicine, Juntendo University
**Department of Radiology, School of Medicine, Juntendo University

We tried to analyse of dynamics of urine stream in ileum and colon after operation of urinary diversion by using 99mTc-DTPA and γ-camera with computer system.

Collimeter is high-analysable with 2 million hole for low energy. 5–7mCi of 99mTc-DTPA was injected intravenously, patient was lay supinely, and image of intestine was obtained clearly by polaroid camera timely from about 5 or 6 minute after injection in normal case of renal function. Simultaneously collecting curve and them avoiding curve of radioactivity in the intestine by direct counting was recorded continuously. It’s able to compare with normal collecting curve of radio-