

N. Kidney and Urinary Tracts

Renogram and Renoscintigram with ^{99m}Tc -DTPA (5th)

—About Partial Renogram—

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We have made the diagnosis of kidney disease with the total renogram. But we often had the unsuccessful results in the correlation to the clinical findings, grasping the clinical situation and the decision of the healing. We have experienced the necessity of dividing the traditional renogram. So we made the partial renogram which divided the renogram.

We fractionated the kidney into the small parts by the digital switch and isolated some places on the kidney with light pen, and also we chose two parts on the kidney, that is, the renal cortex part and renal pelvis part. We obtained the partial renograms from each of these three methods. Consequently, we arrived at the result that the partial renogram that were obtained from the cortex and pelvis part respectively, were the closest the clinical findings.

The cortical renogram and pelvic renogram

were acquired from these field, that is, the renal cortex part is 1/3 outside and 1/2 of length of a long axis of the kidney, the renal pelvis part is 1/3 inside and 1/2 length of long axis.

We made comparison by putting square ROI to cortex and pelvis with the digital switch, and by setting upround ROI along the parts corresponding cortex and pelvis part with the light pen, there was no appreciable difference between them. On the occasion of designating ROI, we easily made square ROI with digital switch. The original data was stored on the magnetic tape and then typed out.

The partial renogram is carried from direct after admission into the cubital vein for 20 min. with the time frame of 10–20 sec.

And we showed the some cases which was effective in the partial renogram.

Computer-Assisted Renogram System

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Renogram is a popular examination in the field of nuclear medicine. But the analysis and interpretation of the renogram curves are time consuming and may sometimes not be impartial, and an "autocount and autoread" renogram system was developed and tested in our department using the minicomputer system which was interfaced to dual scintillation counters.

Results were displayed on CRT or typed on paper by a teletypewriter after calculating the parameters and type of the curve.

Programs used in these studies were:

- 1) Filing patient's personal data.
- 2) Collecting data of the background and activities of kidneys, each 2.5 seconds in 20 minutes.
- 3) Output of renogram curves on CRT and copies on paper.
- 4) Calculation of parameters and type of the curve.

Four hundred and sixty-four cases were examined after the injection of 200 microcuries of Hippuran at prone position in hydrated status.

Thirty-nine parameters of the curve were calculated and studied, and five parameters of them: