

surgical course was observed by ^{131}I -rose bengal hepatogram. This method is of less risk to the patient, is simple and provides

information on the liver function and presence of passage disturbance in the biliary tract.

Clinical Study by Computer Processing of Renoscintigrams

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While scintillation cameras have been extensively used for examinations of the kidneys, the information obtained has not necessarily been applied effectively to clinical diagnoses. We have attempted to enhance the clinical value of these examinations by using a computer to record and process all the RI images from the scintillation camera.

The apparatus used in our research consisted of a scintillation camera "Model RVE-203" linked to an Aloka data processing system with the computer JAC-120. Using a magnetic drum and tape for its external memory device, the apparatus is a capable of continuously recording at certain time intervals up to 100 channels of RI image changes with time. The collected data are reproduced on oscilloscope for three-dimensional display and to draw profile curves. With regard to any given region of interest, changes of RI can be expressed in curves, which may be called regional renogram.

Radioisotopes used were $200\mu\text{Ci}$ of ^{203}Hg -

chlormerodrin or $200\mu\text{Ci}$ of ^{131}I -Hippuran. With ^{203}Hg -chlormerodrin, 10 channels of scintigrams were obtained at 30-second intervals in the 5 minutes immediately following the intravenous injection, and 20 channels at 90-second intervals during the 30 minutes starting 10 minutes after the injection. With ^{131}I -Hippuran, 20 channels were obtained either at 15-second intervals in the 5 minutes or at 30-second intervals in the 10 minutes directly following the injection.

Processing the studying of these data give the following findings:

- (1) From the profile curves, split renal and regional functions can be appraised semiquantitatively.
- (2) RI changes with time in any given region of the kidneys can be obtained.
- (3) The three-dimensional display enables cold areas to be readily located.
- (4) Renal lesions can be discriminated by selective use of various RI and adjusting programs.

On Scintiscanning of Osteomyelitis and Bone Fracture

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In our department, we have applied bone scanning 562 times in the diagnosis of 482 cases of bone diseases and other forms of

trauma so far and have studied the diagnostic application of bone scanning on various bone diseases.