

An Approach for Automatic Analysis of Radioisotope Images with Multi Frame Data

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The system utilized the Hybrid Image Processor with a small computer interfaced to a gamma camera. Each frame image was digitalized by a dual high speed analog to digital converter. Matrix size of an image was composed of 64×64 points. Serial frames were recorded on magnetic tape, and data were processed as a series of image, treated by a format of the motion image. Change of time and concentration after the injection of radioisotope agent were calculated, for the extraction of feature image data of a certain function on the liver and kidney. Images were play back one by one; change of the time and the counts in all regions were graphic

displayed frame by frame. Two parameters, in a time came to peak count and its counts indicated the function of the organ. The peak count image showed a thickness of functional region by a radioisotope, space occupying lesion has been identified as a change of the count distribution on the image. In the time distribution image, it indicated the both appearance and the transit time of each region. These functional images were automatically analyzed by the computer programs made by authors. These quantitative data showed certain feature of organ functions by using the radioisotope imaging with multi frame of the patient.

An Automatic Analysis System for Regional Cerebral Blood Flow Measurement with 16-Channel Equipment

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The system for the 16-channel measurement of the regional cerebral blood flow (rCBF) using a Cerebrograph Model 165 was reported. After intra-carotid ^{133}Xe injection, signals measured by 16 detectors, each of which consists of a collimator 12 mm in inner diameter 45 mm in length and an NaI crystal 1/2 inch in diameter 10 mm in thick, were recorded on a digital magnetic tape cassette, and then

were fed into a small computer. The instrument has a honeycomb holder into which the detectors can be arranged to fit any desired interesting regions of the brain. From the ^{133}Xe cerebral clearance curves, rCBF were calculated by the height over area method and by the initial slope method described elsewhere in detail. However, in order to correct the disadvantage due to small size of the each