Quantitative Analysis of Radiorenogram by Digital Simulation Method

H. Ueyama
Department of Urology, Kyoto City Hospital, Kyoto
A. Hirakawa
Third Medical Clinic, Kyoto University Hospital, Kyoto

Purpose

Quantitative analysis of radiorenograms (I-131 Hippuran renogram and I-131 Na iothalamate renogram) by digital simulation technique.

Method

Using mini-computer (8 k memory size) and "BASIC" language, renogram (I-131 Hippuran renogram or I-131 Na iothalamate renogram) with concomitant 25 min urinary excretion rate of given RI is analyzed in terms of RPF and GFR and other parameters useful for evaluation of renal function. These computed parameters and renogram figures are typed out automatically by the typerwriter attached to the computer.

Result and conclnsion

By the digital simulation method, quantitative analysis or radiorenograms is carried out nearly automatically and the analyzed data are as useful for clinical evaluation of renal function as those of analog simulation method.

Application of Scintigraphy for the Management of Trophoblastic Neoplasia

S. Tojo, S. Yamashita, M. Tanaka, Y. Kawaguchi and M. Hoshina
Department of Obstetrics & Gynecology
T. Maeda and Y. Inoue
Department of Radiology
Kobe University School of Medicine, Kobe

The architecture of trophoblastic neoplasia is very peculiar, because it has not the interstitial tissue in foci of the tumor but malignant cells are floating in the blood lakes which are made from the extensive lesions induced with remarkable invasion of the tumor.

From the reason, pelvic angiography is very useful to visualize the existence of the tumor and to make the exact extimation of characteristics of this tumor in detail in the field of clinical practice.

Therefore we have tried to analyze the abnormal findings concerning the tumor numerically by computer assisted angio-scintigraphy.

In the method, 8 mCi 99m Tc-pertechnetate was administered via an intra-aortic catheter, and the displacement of RI in the pelvic cavity was detected by scinillation camera, and the scintiphoto image recorded in videotape, was converted to digital matrix by an A-D converter.

During replay of the videotape, the split-area in the abnormal image expressing the tumor was sectioned, and RI dynamics in this area was analyzed by a computer.

There appeared a characteristic pattern in the "diminish phase" of RI dynamic curve when the trophoblastic neoplasia was existence, that is, the curve was tracing of two or three components.

The following points can be clear that the pattern of slope and the point of deflection in the "diminish phase", it would possible to

evaluate the character of the tumor numerically.

Futhermore the observation of RI dynamic curve during the chemotherapy is a useful method to know the effects of anti-tumor agents.