

CLINICAL EVALUATION OF RADIONUCLIDE ANGIOCARDIOGRAPHY IN THE CARDIAC AND GREAT VESSEL DISEASES

Tamotsu Osawa, Kazutoshi Hirose, Satoshi Kobayashi, Shuji Nobezawa, Toshihiko Karno, Tadakazu Fujii

Kenseibu Hamamatsu Medical Center Hospital, Hamamatsu

We studied radionuclide angiocardiology in 110 cases (42 old myocardial infarction; 8 angina pectoris; 7 primary myocardial disease; 10 valvular disease; 8 aneurysm of aorta; 4 caval obstruction; 1 simular syndrome; 27 other cardiovascular disease) with abnormality on clinical data.

Method: In order to produce a good bolus of nuclide, three way stopcock method was used, teflon needle of 19 gage caliber connected by three way stopcock to the nuclide and saline syringes was inserted into the right femoral vein. Radionuclide was chosen suitable one from among ^{99m}Tc -pertechnetate, ^{99m}Tc -DMSA, ^{99m}Tc -HSA, ^{99m}Tc -diphosphonate and ^{99m}Tc -pyrophosphate. Nuclide, 10-30mCi in 1-1.5ml saline, was rapidly injected and then the vein was flushed with 20ml of saline immediately. After the injection of nuclide, the series of cardiac scintiphotograms were taken with scintillation camera connected to minicomputer. Images were obtained for 100-175 frames at a rate of 1-5/sec.

Results and Conclusions

Our three way stopcock method produced a good bolus of radionuclide. In the cases of myocardial infarction, ischemic areas showed akynetic or hypokynetic in RI angiocardiology. Therefore, RI angiocardiology was obtained indirect finding of myocardial infarction. In the cases of shunting left to right or right to left, dynamic curves recorded with setting of the region of interest were effective. In the cases of aneurysm, caval obstruction and thrombosis, RI angiocardiology was capable of accurate diagnosis.

In general, we recommend that simple and safety radionuclide angiocardiology be performed as a screening procedure prior to cardiac catheterization or selective contrast angiography. Particularly, we suggest that the radioisotopic procedure be considered under any of the following circumstances: (1) As a screening test in patients with suspected heart disease, caval obstruction, aortic aneurysm and thrombosis of artery or vena. (2) In patients sensitive to radiographic contrast media. (3) In patients too dangerous to undergo heart catheterization or contrast angiography. (4) Serially, as a guide to the progression of disease in patients who are necessary follow-up after medical treatment.