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PHASE ANALYSIS IN ECG GATED CARDIAC BLOOD POOL STUDIES. H.Ochi,Y.Ikuno,Y.Onovama, M.L.Goris,P.A.Briandet,M.Hara. Osaka City University, Stanford University and Informatek. Osaka and U.S.A

Phase analysis is based on the description of the heart motion periodicity by the first harmonic of the fourier series. The resolution of the phase delay appears to be higher than the sampling interval in the original data. This presentation intends to show how wall motion abnormalities can be demonstrated using this characteristic of the computed phase delay. The principles of the method have been described by Bitter, et al and Deconinck, et al. For the 64 X 64 points in a 16 frame ECG gated study, the phase shift is computed from the sine and co-sine coefficients of the first harmonic in the fourier series. The phase shift values found over the left ventricle only are re-expanded to cover 120 time intervals. Static and cinematic inspection of the results was carried out. It was shown how the contraction patterns of the left ventricle could be better demonstrated in the patients with myocardial infarction, with the finer resolution than the one originally available in the 16 interval cycle. Also it was shown how the conduction patterns of the both ventricles could be better demonstrated in the patients with complete left bundle branch block and right ventricular pacing by the cinematic inspection.

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APPLICATION OF CT DISPLAY APPARATUS TO DATA HANDLING OF NUCLEAR IMAGES. K.Mishio, T.Nakajima,M.Yamakawa,Y.Watanabe,S.Matukawa,Y.Sasaki and T.Nagai. Saitama Cancer Center, St.Marianna University School of Medicine and Gunma University. Ina,Kawasaki and Maebashi.

With the purpose to utilize high performance minicomputer and display apparatus to XCT for data handling and display of nuclear images we have made computer programs to transfer stored data in Scintipac 200(Shimazu) to CT/T system(G.E.). The display apparatus used was a graphic terminal Ramtek 9133B with a large image memories and 2047 density control levels. Magnetic tapes were used for the mutual transfer of image data between gamma camera system and CT system.

Our computer programs include,(1) image reconstruction for radionuclide transaxial emission tomography(RCT),(2) combination of RCT and XCT superimposing RCT images on XCT contour images,(3) cine mode display of RI dinamic images,(4) three dimensional observation of nuclear images by continuous rotation of original images for RCT reconstruction.

Application of high performance display apparatus should prove useful for improving diagnostic efficacy of imaging proceeedures in nuclear medicine.